CURTIS'S

BOTANICAL MAGAZINE,

COMPRISING THE

Plants of the Royal Gardens of Kew

AND

OF OTHER BOTANICAL ESTABLISHMENTS IN GREAT BRITAIN;

WITH SUITABLE DESCRIPTIONS;

BY

JOSEPH DALTON HOOKER, M.D., F.R.S. L.S. & G.S.

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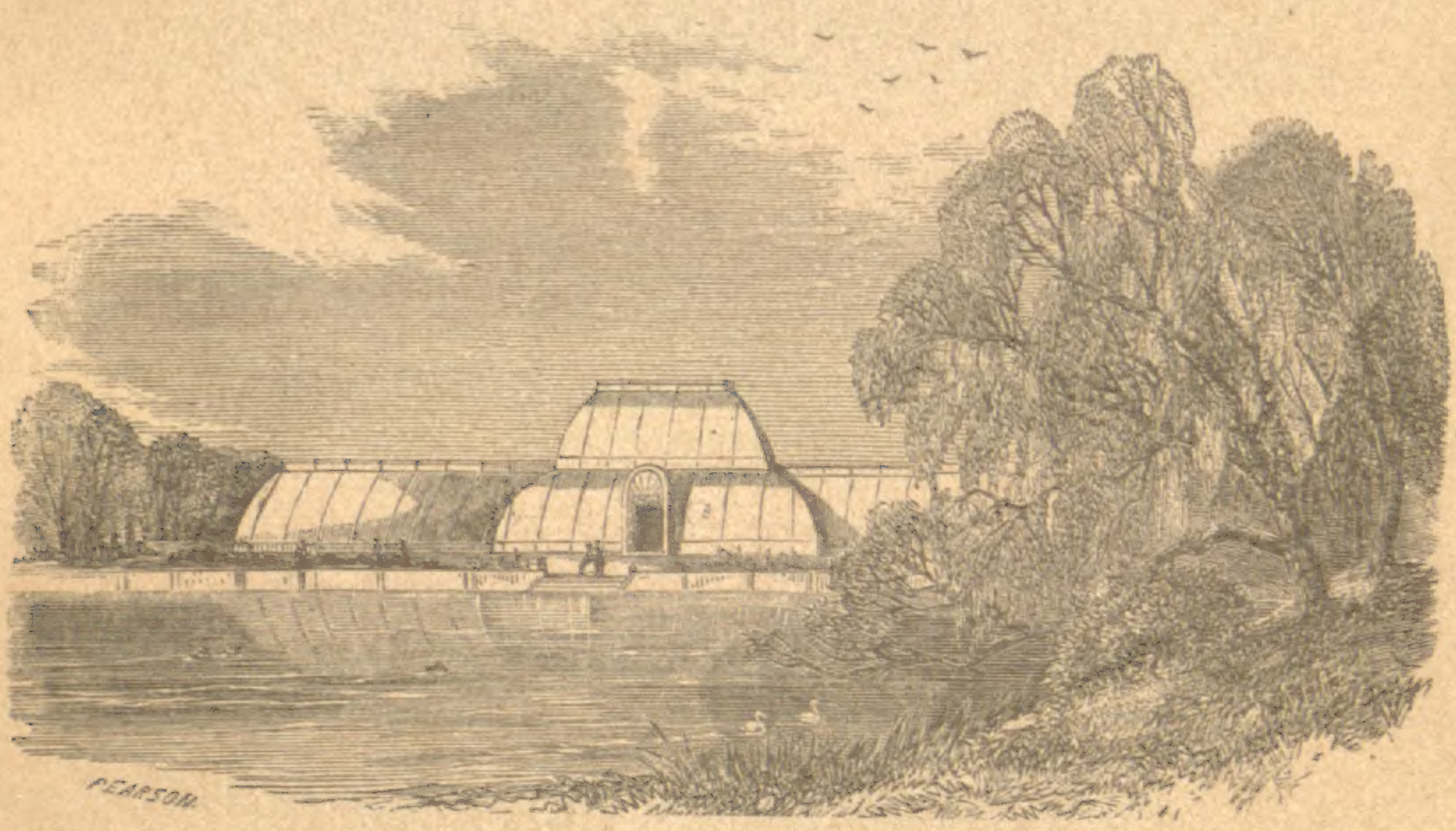
VOL. XXVI.

OF THE THIRD SERIES;

(Or Vol. XCVI. of the Whole Work.)



Thanks for the many-tinted flowers,
Earth's rainbow, born of sun and showers;
And thanks for eyes and mind, that we
Their glory feel—their beauty see.

Thanks for monitions by the flowers,
That Faith, Content, and Trust be ours:—
The gorgeous trappings of our pride
Pale by the simple flowers' side.

L. N.

LONDON:

L. REEVE & CO., 5, HENRIETTA STREET, COVENT GARDEN.

1870.

Mo. Bot. Garden.

1897.

SHOUT
SHARE
IT

LONDON :
SAVILL, EDWARDS AND CO., PRINTERS, CHANDOS STREET, COVENT GARDEN.

TO THE

REV. C. PARISH, M.A.,

OF MOULMEIN.

My dear Mr. Parish,

Pray accept the dedication of the 96th Volume of the "Botanical Magazine" in the spirit which has prompted it: a desire, namely, to record my sense of the value of your Botanical discoveries, especially of Orchids, in the Eastern Peninsula of India; and of your many contributions to the collections at Kew, of whose beauty and interest the plates of the "Botanical Magazine" afford abundant evidence.

Believe me ever,

Very sincerely yours,

JOS. D. HOOKER.

Royal Gardens, Kew,
Dec. 1, 1870.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5813.

DAHLIA IMPERIALIS.

Imperial Dahlia.

Nat. Ord. Compositæ.—Syngenesia Superflua.

Gen. Char.—*Capitulum* radiatum, fl. radii ligulatis fœmineis neutrisve, disci tubulosis 5 dentatis. *Involucrum* duplex, exterius squamis foliaceis 1-serialibus circa 5 patulis reflexisve; interius squamis subbiserialibus basi inter se coalitis. *Receptaculum* planum, paleaceum, paleis membranaceis oblongis indivisis. *Styli* rami erecti aut subincurvi, crassi, extus piliferi. *Antheræ* ecaudatæ, appendiculatæ. *Achænium* oblongo-obovatum, obcompressum, epapposum, apice obsolete bicorne. Herbæ Mexicanæ *grandes*. Folia *opposita*, *pinnatipartita*, *rarius bipinnatipartita*, *segmentis ovatis acutis serratis*. Radices *fasciculatæ*, *aliis cylindricis*, *aliis oblongo-tuberculatis*. Rami *apice elongati*, *nudi*, 1-*cephali*. Capitula *versicolora*, *disco nempe luteo*, *radio purpureo roseo albo aut flavo*.—*D. C. Prod.*

Dahlia *imperialis;* caule elato 4-6-gono nodoso, ramis brachiatis internodiis subtomentosis, foliis amplis 2-3-pinnatisectis, foliolis ovatis acuminatis serratis sparse pilosis, petiolo basi dilatato cymbiformi, cymis ad apices ramulorum 3-chotome ramosis, capitulis 3-nis longe pedicellatis nutantibus maximis, involucri squamis exterioribus 5 herbaceis oblongo-spathulatis obtusis, interioribus lineari-oblongis obtusis pellucidis, ligulis fœmineis lanceolatis acuminatis albis roseo-tinctis.

Dahlia imperialis, *Roezl. ex Ortgies* in *Regel Gartenflora*, v. xii. p. 243, t. 407-408 (1863).

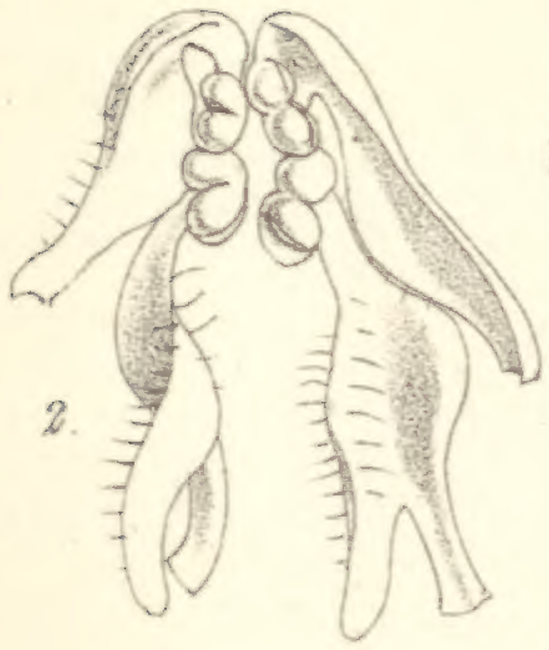
For our first knowledge of this most magnificent plant we were indebted to an article and drawing contributed to Regel's Gartenflora, by M. E. Ortgies, of the Zürich Botanic Garden; where, however, the specimen described and figured is literally not one-third the size of that here given, and very inferior in beauty; the flowers being in the German plate only two and a half inches in diameter, and of a pure white, whilst ours are seven inches in diameter, tinged with faint lilac and streaked with blood-red at the base. This increase of size cannot, as might be suspected, be due to, or ac-

companied by, a loss of fertility, for M. Ortgies describes the ray flowers as neuter, whereas those of our specimens have fully-formed achenes, and short 2-fid styles sunk in the corolla tube.

Beyond its being a native of Mexico, nothing is known of the locality or conditions in which it grows wild. Its tubers were sent from that country to the Zürich Garden in 1862, and being planted out the stems attained a height of seven feet; these formed buds in October, and on removal to a conservatory the plants bloomed imperfectly. More recently, under good culture, *D. imperialis* attains a height of twelve to eighteen feet, forming a knotted, erect, straight trunk, naked below, and bearing above a pyramid of foliage and flowers. Flowering at so late a season, when protection is necessary, there are few establishments that can afford to grow and bloom so gigantic a plant, in its natural state, but Messrs. Salters, of Versailles Nurseries, Hammersmith, having successfully grafted a plant on the root of a dwarf *Dahlia*, believe, that by this means not only may plants of convenient size be obtained, but that it may be induced to flower earlier, and thus become an outdoor plant in this climate. Mr. Fitch informs me that Mr. Salter's plants form a pyramid of six to eight feet high from the ground, and bloom luxuriantly.—*J. D. H.*

Fig. 1, Entire plant, *reduced;* 2, portions of leaf, and 3, of infloresence; 4, base of ray-flower, and 5, achene of ditto, *all of nat. size;* 6, disk flower; 7, stamen, and 8, style-arm of ditto:—*all magnified.*

1.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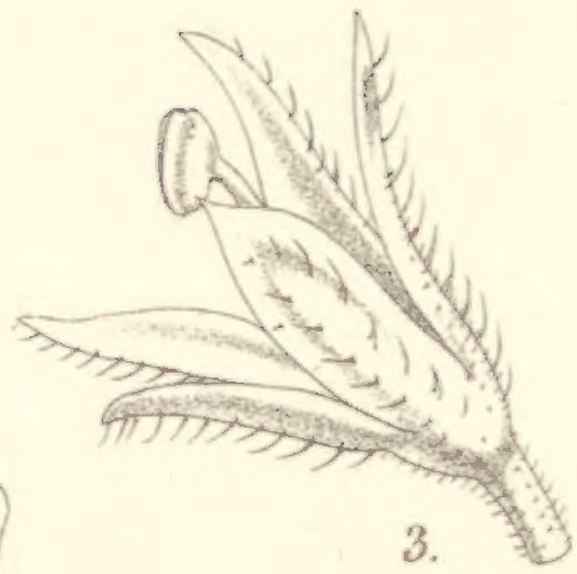
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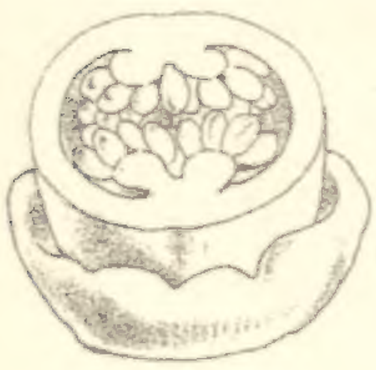
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Tab. 5814.

JERDONIA Indica.

Indian Jerdonia.

Nat. Ord. Didymocarpeæ.—Didynamia Angiospermia.

Gen. Char.—*Calyx* 5-partitus, lobis oblongo-lanceolatis. *Corolla* infundibuliformis, tubo curvo ultra medium oblique ventricoso; labio superiore bifido lobis emarginatis, inferiore trilobo lobis obtusis. *Stamina* 4, medio tubo inserta, omnia fertilia, filamentis curvis dilatatis; antheræ biloculares supra stigma cohærentes, loculis didymis. *Ovarium* disco cupulari impositum; stylus breviusculus, stigmate peltato; ovula numerosa, placentis 2 parietalibus bifidis inserta. *Capsula* ovoidea, polysperma. *Semina* subglobosa, testa foveolata. Herba *parva, scapigera, pubescens.* Folia *petiolata, cordata, integerrima.* Scapi *numerosi, 1–2-flori; flores pallide lilacini.*

Jerdonia *Indica.*

Jerdonia Indica; *Wight, Ic. Pl. Ind. Or.* t. 1352, *Ill. gen.* v. ii. t. 159 *bis.*

A very curious little plant, discovered on the western slopes of the Neilgherrie Mountains, by Dr. Wight, and of which seeds were sent last year to the Royal Gardens, by Major Beddome, Conservator of Madras Forests, which flowered in October of the present year. The genus was named Jerdonia, in honour of the eminent ornithologist, Surgeon-Major T. C. Jerdon, F.L.S., of the Indian army; it is a stove plant, interesting in a horticultural point of view, from its pretty foliage and numerous pale lilac flowers, streaked with blood-red. Botanically it differs remarkably from its congeners in the curious dilated filaments and placentation. I have seen young capsules only, and with immature seeds, these are inserted on parietal placentas, that do not project far into the axis of the ovary like those of other *Didymocarpeæ*. Dr. Wight states that it flowers in March and April, but his dried flowering specimens were gathered in September and October, at which time the new plants also flowered.

Descr. *Rootstock*, two to three inches long, creeping,

woody, knotted, branched at the top. *Stem* very short. *Leaves* opposite, very crowded, spreading horizontally, one to two inches long, cordate, obtuse, quite entire, slightly pubescent above, veins below margins and petioles ciliate with red hairs; upper surface very dark green, blotched with pale green along the mid-rib and principal veins; petiole one half to two inches long. *Scapes* axillary, numerous, erect, slender, green, one to three-flowered, naked, or with minute subulate bracts at the pedicels or below it. *Flowers* three-quarters of an inch long, horizontal; pedicels short. *Calyx-lobes* one quarter of an inch long, subulate-lanceolate, green, hairy. *Corolla* slightly pubescent, pale lilac; tube funnel-shaped, suddenly inflated at the middle, gibbous above and below, streaked with crimson veins; upper lip with two short notched lobes; lower lip with three longer rounded lobes. *Stamens* four; filaments very broad, membranous, ciliate; the lower pair with a broad obtuse lobe produced below the insertion; upper pair hooded at the top; anthers small, didymous, cohering over the stigma. *Ovary* seated in a cup-shaped disk, narrowed into a short style; stigma peltate; ovules numerous, on two parietal bifid placentas. *Capsule* ovoid. *Seeds* many, small; testa deeply pitted.—*J. D. H.*

Fig. 1, Corolla laid open; 2, stamens; 3, calyx; 4, ovary and disk; 5, transverse section of ditto:—*all magnified.*

1.

2.

3.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5815.

PHALÆNOPSIS Parishii.

The Rev. C. H. Parish's Phalænopsis.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5351.)

Phalænopsis *Parishii;* foliis 2–4-pollicaribus oblongis acutis concoloribus, racemo brevissime pedunculato 6–10-floro, sepalis albis obtusis v. subacutis superiore oblongo lateralibus late ovatis, petalis albis spathulato-oblongis, labello breviter unguiculato lobis lateralibus parvis corniculatis flavis terminali amplo albo purpureo tincto late deltoideo acuto angulis lateralibus auriculatis disco callo basi semilunari extus fimbriato-lacero et appendice anteposita elongata in lacinulas filiformes fissa instructo.

Phalænopsis Parishii, *Reichb. f.* in *Gard. Chron.* 1865, p. 410; *Xen. Orchid.*, p. 144, t. 156, f. I. 10.

A lovely little plant, discovered by Mr. Parish in the Birmese forests, in 1864, and sent by him to Messrs. Low, of Clapton, as well as to the Royal Gardens at Kew. It was first described by Professor Reichenbach in 1865 from specimens flowered both at Mr. Dawson's and Day's, at about the same time. The specimen here figured bloomed at Kew in May, 1868, and was received from Colonel Benson in the previous year.

Descr. *Roots* stout, widely spreading. *Stem* very short, almost none. *Leaves* distichous, oblong-lanceolate, acute, deep green, two to four inches long. *Racemes* several, sessile, as long as, or shorter than the leaves, six to ten flowered. *Flowers* rather crowded; bracts minute subulate; pedicel and ovary, one inch long, white. *Perianth* two-thirds of an inch diameter, spreading. *Sepals* white, dorsal oblong, subacute; lateral larger, broadly ovate. *Petals* obovate-spathulate, white, obtuse, as long as the upper sepal. *Lip* with a short claw, bent at right angles to the limb; lateral lobes small, horn-like, yellow with purple blotches; terminal

lobe red-purple, with often a white disk, very broadly triangular, acute, angles auricled; disk with a semilunar callus, the outer margin of which is broken up into a fimbriate crest; at the base of the disk is a linear appendage projecting forwards, divided to near the base into four slender filaments, almost as long as the terminal lobe.—*J. D. H.*

Fig. 1, Column and lip; 2, part view of ditto; 3, pollinia:—*all magnified.*

W Fitch, del. et lith

Vincent Brooks, Day & Son, Imp.

ANTIGONON leptopus.

Slender-stemmed Antigonon.

Nat. Ord. Polygoneæ.—Monadelphia Octandria.

Gen. Char. Sepala 5, colorata; 3 exteriora late cordata v. ovata; 2 interiora oblonga. *Stamina* 8, æqualia, filamentis subulatis inferne in cupulam subcarnosam calycis fundo insertam connatis; antheræ oblongæ utrinque emarginatæ. *Ovarium* trigonum; styli 3, inferne connati, recurvi, stigmatibus capitato-reniformibus; ovulum demum erectum, micropyle infera. *Achænium* calyce aucto emarcido semiaperto inclusum, ovoideo-triquetrum, 1-loculare, pericarpio tenui intus lævissimo. *Semen* basilare, erectum, pyramidatum, albumen farinosum sinuato-lobatum ruminatum; embryo antitropus, radiculâ superâ. Suffrutices Mexicani *scandentes, ramis angulatis.* Folia *alterna, petiolata, herbacea, cordata, integerrima; petiolis basi amplexicaulibus; ochreis oppositifoliis, obsoletis, squamiformibus.* Racemi *oppositifolii, solitarii, simplices, aphylli, apice cirrhosi; fasciculis pauciforis, bracteâ squamiformi fultis, pedicellis capillaribus articulatis.*—Meissner.

Antigonon *leptopus;* foliis ovatis ovato-hastatisve acuminatis profunde cordatis in petiolum haud productis subtus ramisque tomentosis vel demum glabratis racemis folio vix longioribus.

Antigonon leptopus, *Hook. and Arn. Bot. Beech.*, p. 308, t. 69; *Benth. Bot. Sulphur*, pp. 47 and 16 0; *Meissn.* in *D.C. Prod.* v. xiv. pt. 1, p. 184.

In some parts of America and the West Indies this is known as one of the most beautiful ornamental climbers, rivalling *Bougainvillea* in the abundance and colour of its blossoms, and yet, strange to say, it has been only of late introduced into Europe. It is a native of Mexico, and we have also specimens from New California, Guatemala, Jamaica, and New Grenada, but no doubt it is only cultivated in some or all of these localities. The plant here figured was raised from seed sent from Honolulu, in the Sandwich Islands, by our excellent correspondent, Dr. Hillebrand, which flowered in October of the present year.

Descr. A tall, slender climber, glabrous or with young

shoots pubescent. *Leaves* three to five inches long, hastate-ovate, or ovate-cordate, deeply lobed at the base, membranous, reticulated; petioles half an inch to one and a half inches long. *Racemes* axillary and terminal; peduncles running out into very slender branched hooked tendrils; bracts subulate; pedicels slender, half an inch long. *Sepals* half an inch long, bright rose; outer cordate, acute, margins reflexed; inner much smaller, oblong, acute. *Staminal tube* with a triangular tooth between the bases of the filaments; filaments pubescent, three longer than the rest. *Ovary* ovoid; styles three, stigmas reniform.—*J. D. H.*

Fig. 1, Flower and pedicel; 2, staminal column; 3, the same laid open, showing the ovary; 4, transverse section of young fruit:—*all magnified.*

W. Fitch del. et lith.

Vincent Brooks Day & Son Imp.

Tab. 5817.

CUCUMIS ANGURIA.

West Indian Gherkin.

Nat. Ord. Cucurbitaceæ.—Monœcia Triandria.

Gen. Char.—*Flores* monœci, rarius diœci. *Masc.* solitarii vel fasciculati. *Calycis* tubus brevis; lobi subulati. *Corolla* campanulata, profunde 5-loba, lobi acuti. *Filamenta* brevia, libera, intra calycis tubum inserta; antheræ oblongæ, una 1-locularis, duæ 2-loculares, loculi flexuosi raro recti vel curvi, connectivo producto apice papilloso. *Ovarii* rudimentum glandulosum. *Fl. fœm.* solitarii. *Staminodia* 0 v. subulata v. ad glandulas reducta. *Ovarium* ovoideum v. globosum; stylus brevis, stigmatibus 3, sessilibus obtusis; ovula numerosa, placentis 3 vel 5 inserta. *Fructus* subglobosus, cylindricus, v. trigonus, lævis tuberculatus v. spinosus, interdum trivalvis. *Semina* numerosa, oblonga, compressa.—Herbæ *annuæ vel radice perennante*, *prostratæ* v. *scandentes*, *hispidæ* v. *scabridæ*. Folia *integerrima lobata palmata v. pedata*. Cirrhi *simplices*, *interdum breves et spinescentes*. Flores *parvi*, *plerumque flavi*.

Cucumis *Anguria*; flagellis angulatis asperis, foliis subtus villoso-hispidulis profunde 5-lobis, lobis interdum sed potissimum intermedio lobulatis, omnibus obtusis sinubus rotundatis, floribus femineis longe pedunculatis, ovario muricato, peponibus ovoideis aculeolatis pulpa acidula aut insipida non autem amara. *Naud.*

Cucumis Anguria, *Linn. Sp. Pl.* p. 1446. *Naudin*, in *Ann. Sc. Nat.*, Ser. 4, vol. xi. p. 11, and vol. xii. p. 108.

Cucumis echinatus, *Mœnch, Method.*, p. 654.

Cucumis angurioides, *Rœm. Synops. Cuc.* p. 79.

This, the plant which produces the fruit long and well known in commerce as a principal ingredient in West Indian pickles, is much less well known than might be supposed, and its history even at the present time is obscure. Though a reputed native of the Antilles, it is known there, I believe, in cultivation only, and being the only species of the large genus to which it belongs, which has hitherto been regarded as a native of the New World, its claims to being really indigenous are, as Monsieur Naudin hints, very suspicious. For my own

part, after a careful study of many African species of *Cucumis*, I am strongly disposed to regard *C. Anguria* as a cultivated annual state of some one of them, and originally brought by the Negroes from Africa, though so altered by cultivation that it may not be possible to say of which. It clearly belongs to the group including the bitter perennial *C. prophetarum*, L., which inhabits the drier parts of Africa and Arabia, and is conspicuous for its scabridity and its ashy white hispid pubescence; but which in moister parts of Africa is represented by the perennial *C. Figarii*, which is green, and of which the foliage and fruit are very similar indeed to those of *C. Anguria*; all these have ovoid berries covered with soft spines and striped with white, and their floral characters are identical.

The specimen here drawn flowered at the Horticultural Society's Garden at Chiswick, in August of the present year, and the fruit ripened in November. There is an excellent description of it by Naudin in the *Annales des Sciences Naturelles*, where it is stated to be abundantly cultivated in New Grenada, and latterly in Algeria. M. Naudin ably discusses the affinities of *C. Anguria*, but pronounces against its possible identity with *C. Figarii* or *C. prophetarum*.—*J. D. H.*

Vincent Brooks, Day & Son, L

Tab. 5818.

MONOLENA PRIMULÆFLORA.

Primrose-flowered Monolena.

Nat. Ord. Melastomaceæ.—Decandria Monogynia.

Gen. Char.—*Calycis* glabri tubus turbinatus, 3-gonus; lobi 5, ovati, obtusi, membranacei. *Petala* 5, elongata, obovato-spathulata, obtusa. *Stamina* 10, alterna paulo minora; antheræ lineari-oblongæ, obtusæ, 1-porosæ, connectivo basi producto infra loculos geniculato, antice in appendicem adscendentem subspathulatam obtusam producto, postice supra insertionem filamenti tuberculato; minorum connectivo brevius producto. *Ovarium* calyci adhærens, 3-quetrum, vertice late ex sculptum; stylus incrassatus, apice filiformis, stigmate obtuso. *Capsula* late depresso 3-gona, 3-valvis, valvis suberosis latissimis, vertice basi styli oblongo 3-lobo persistente coronata, loculis parvis. *Semina* obovoideo-pyramidata, hilo basilari.—Herbæ *carnosulæ, acaules, glabræ, rhizomate crasso.* Folia *longe petiolata, oblonga cordata v. orbiculata, integerrima v. denticulata.* Scapi *graciles.* Flores *ampli, in cymam scorpioideam dispositi, breviter pedicellati, carnei.*

Monolena *primulæflora*; glaberrima, rhizomate crasso tuberoso, foliis petiolatis late ellipticis acuminatis coriaceis obscure sinuato-dentatis ciliatis 3-5-plinerviis, supra læte viridibus, subtus petiolisque rubro-purpureis, pedunculis ex apice rhizomatis numerosis petiolo subæquilongis 2-3 floris, calycis tubo globoso lobis inæqualibus rotundatis, petalis roseis basi albis.

Bertolonia primulæflora. *Hort.*

This remarkably beautiful stove-plant was introduced by Mr. Bull, F.L.S., from New Granada, and a flowering specimen was presented by him to the Royal Gardens, Kew, in November 1869, from which the accompanying drawing was made. It appears to flower very freely, and whether for the number and delicate tints of the flowers, or the brilliancy of the green upper- and purple under-surface of the leaves

and petioles, it certainly may take rank with the best plants of its class.

There is a very similar, and probably identical plant in the Hookerian Herbarium, collected by Lechler in Peru, and also in woods about Monterico, at an elevation of three to four thousand feet, by Pearce, who describes the leaves as fleshy, subacid, and astringent. Lechler's plant is labelled *Monolena Sprucei*, by Triana, but that name being unpublished, I have adopted that of *primulæflora*, which has been already applied to it.

Descr. *Rootstocks* crowded, as large as a hazel nut, scarred. *Leaves*, four to six inches long, elliptic, acuminate, three- to five-nerved from above the base, margins sinuate-toothed, ciliate, upper surface bright glossy green, lower and petiole red-purple. *Peduncles* variable in length, two to three flowered. *Flowers*, one inch diameter, deep bright pink, with a white eye and yellow anthers; bracts orbicular; pedicles very short. *Calyx* tube bluntly trigonous, globose, lobes short, rounded. *Petals* obovate or obcordate. *Anthers* with a club-shaped, erect appendage. *Style* swollen above the base.—*J. D. H.*

Fig. 1. Flower with petals removed and bract; 2, stamens; 3, ovary, disk, and style; 4, vertical section of ditto :—*all magnified.*

Vincent Brooks Day & Son, Imp.

TAB. 5819.

DELPHINIUM NUDICAULE.

Naked-stemmed Larkspur.

Nat. Ord. RANUNCULACEÆ.—POLYANDRIA TRIGYNIA.

Gen. Char.—*Sepala* 5, basi subconnata, posticum (seu calycis tubus) deorsum in calcar productum. *Petala* 2 v. 4, parva, 2 postica (sæpe connata) in appendicem calcariformem intra calcar calycis producta, 2 lateralia ecalcarata v. deficentia. *Carpella* 1-5, sessilia, libera, pluriovulata, maturitate folliculatim dehiscentia. *Semina* subcarnosa.—Herbæ *annuæ v. caudice radiciformi perennes, erectæ, ramosæ.* Folia *alterna, subternatim palmatimve lobata v. dissecta.* Flores *majusculi, laxe racemosi v. paniculati, cærulei, purpurei, rosei v. albi, rarissime, coccinei v. flavi.* Filamenta *basi interdum dilatata.*

DELPHINIUM *nudicaule;* foliis radicalibus petiolatis orbiculatis tripartitis, segmentis 3-7 obovato-cuneiformibus 3-7 lobis, scapo racemoso laxifloro, pedicellis elongatis, calcare recto, sepalis late ovatis coccineis, petalis superioribus calycem subæquantibus inferioribus 2-fidis basi minute calcaratis carpellis 3 patenti-recurvis reticulatis pubescentibus.

DELPHINIUM nudicaule, *Torr. and Gray, Fl. N. Am.*, vol. i. p. 33.

A very beautiful, hardy perennial, raised from Californian seeds by Mr. Thompson, of Ipswich, and flowered in July of last year. It was discovered by the late David Douglas, in 1833, and has been collected by many subsequent travellers. As a species it is nearly allied to *D. cardinale*, Hook (Tab. Nost. 4887), from which it differs in its much smaller size, broader leaf-lobes with short segments, laxer panicle, far paler, smaller, and more orange-colored flowers, nearly glabrous perianth, and pubescent carpels.

FEBRUARY 1ST, 1870.

Descr. *Root* perennial. *Stem* twelve to eighteen inches high, glabrous, branched; branches ten to fourteen flowered. *Radical leaves* two to two and a half inches diameter, three- to seven-lobed to the middle or nearly to the base, segments obovate-cuneate with three to seven broad, ovate, or rounded apiculate lobes at the top; petioles three to five inches long; cauline leaves shortly petioled, three to five cleft. Racemes three to seven inches long; pedicels, one to one and a half inches long, spreading; bracts small, linear; bracteoles linear-oblong, pubescent. *Flowers*, including the spur, one and a half inches long. *Sepals* bright orange-red, concave, obtuse, scarcely spreading; spur stout, nearly straight, a little longer than the rest of the flower. *Petals* about as long as the sepals, linear-oblong, bright yellow; two upper 2-fid at the tip, ciliate. *Carpels* three, spreading and recurved, reticulate, veined; style slender.—*J. D. H.*

Fig. 1. Flower with the sepals and two lower petals removed; 2, carpels: —*both magnified.*

W Fitch. del et lith

Vincent Brooks Day & Son Imp

Tab. 5820.

HOYA Australis.

Australian Hoya.

Nat. Ord. Apocyneæ.—Gynandria Pentandria.

Gen. Char. (*Vide supra*, Tab. 5272).

Hoya *Australis*; glabra, foliis breviter petiolatis ovatis obovatis v. suborbiculatis obtusis v. breviter acuminatis basi rotundatis v. subcordatis, floribus umbellatis, pedunculis petiolos subæquantibus, corolla late 5-loba glabra marginibus planis papillosis, coronæ segmentis in laminam concavam horizontaliter patentem dilatatis margine exteriore obtuso interiore acuminato incurvo dorso bicarinato.

Hoya Australis, *Br. Traill*, in *Trans. Hort. Soc.*, vol. vii. p. 28. *Benth. Fl. Austral.*, vol. iv. p. 346.

H. bicarinata, *A. Gray*, in *Proc. Amer. Acad. Sc.*, vol. v. p. 335.

H. Dalrympliana, *F. Muell, Rep. Burdek Expd.*, p. 16.

A handsome, free-growing species of *Hoya*, first detected a century ago by Sir Joseph Banks during Captain Cook's voyage on the Endeavour River in Queensland, and afterwards collected by Brown, Backhouse, Mueller, and others, at Moreton Bay, Rockhampton, the Clarence River, and elsewhere in New South Wales and Queensland. It is also a native of the Fiji and Samoan groups. It was introduced into this country by the late James Backhouse, who collected it on the banks of the Brisbane, and who sent flowering specimens to Kew in 1863. The specimen from which the accompanying drawing was made, was presented to the Royal Gardens by George Macleay, Esq., in 1864. It flowers annually in the month of October, and diffuses a rich honeysuckle-like scent.

February 1st, 1870.

Descr. A succulent glabrous twiner or epiphyte. *Leaves* very dark green, two to three inches long, very coriaceous and fleshy, on short petioles, ovate obovate or nearly orbicular, obtuse or shortly acuminate, rounded or rarely almost cordate at the base. *Flowers* white, tinged with pink in the centre, in simple umbels, peduncles interpetiolar, rarely exceeding the petioles; pedicels pubescent, slender, half to one inch long, or even more. *Calyx-segments* about one line long. *Corolla* spreading to half an inch diameter, broadly five-lobed, the upper surface nearly smooth and glabrous, except towards the edges, which are slightly papillose and not reflexed. *Corona-segments* expanded into concave (at first almost cup-shaped) horizontally spreading laminæ, very obtuse on the outer margin, the inner margin acuminate and incurved, the back prominently two-keeled.—*G. Benth.*

Fig. 1, Flower; 2, corona removed:—*both magnified.*

W Fitch, del et lith

Vincent Brooks Day & Son Imp

Tab. 5821.

CURCUMA PETIOLATA.

Long-petioled Curcuma.

Nat. Ord. Scitamineæ.—Monandria Monogynia.

Gen Char. (*Vide supra*, Tab. 5620).

Curcuma *petiolata*; rhizomate tuberibusque parvis paucis intus flavis, foliis longe petiolatis oblongo-lanceolatis acuminatis basi rotundatis cordatisve, pedunculo terminali breviusculo, corona oblonga breviuscula bracteis late et longe confluentibus inferioribus reniformibus margine brevi recurvo roseo, superioribus gradatim majoribus, supremis radiantibus limbo breviter ovato subacuto roseo-purpureo, floribus bracteis fere occlusis flavis, calycis limbo brevi, corollæ tubo inferne cylindrico superne campanulato, lobis late ovatis subacutis interioribus paulo longioribus labello brevi late recurvo apice fisso, anthera oblonga calcaribus subulatis porrectis.

Curcuma petiolata, *Roxb. Fl. Ind.*, vol. i. p. 37; *Roscoe's Monandrian Plants*, tab. 100; *Horaninow, Prod. Monog. Scitam.*, p. 23.

The very beautiful plant here figured is a native of the forests of Pegu and Martaban, where it was discovered by a Mr. F. Carey, probably a connexion of the eminent Indian Botanical Missionary, the Rev. W. Carey, who took charge of the Calcutta Botanic Garden during Dr. Roxburgh's illness and absence, and who, in 1831, edited Roxburgh's "Flora Indica," in which this species is first described. In that work Roxburgh states that *Curcuma petiolata* was sent by Mr. F. Carey to the Calcutta Botanic Gardens, where it flowered in August. Our specimens were transmitted from Moolmayne by our excellent correspondent, the Rev. C. Parish, and flowered in the Royal Gardens in September, 1869. As a species it is closely related to the *Turmeric* (*C. longa*) and to the beautiful *C. Australasica* (Tab. Nost. 5620), which however, has leaves narrowed at the base, a longer spike, and the flowers are not

so deeply sunk in the pouches formed by the bracts. Roxburgh states that the pouches are uncommonly deep in this species, and that the rounded or cordate base of the leaf is peculiar to it.

Descr. *Rootstock* rather slender, with small tuberous roots, both yellow internally. *Leaves* six to ten inches long, oblong-lanceolate, acuminate, rounded or cordate at the base, bright deep green, rather paler below; petiole four to six inches long, rather slender. *Spike* five to six inches long, on a terminal, short, stout peduncle, broader upwards, two inches diameter across the bracts below, three to three and a half inches across the uppermost bracts, which form a rather depressed head. *Bracts* about twenty to thirty, connate for about half their length, forming deep pouches which wholly include the flowers, green with recurved rose-pink margins; lower reniform, one to one and a quarter inches in diameter, with narrow recurved rounded margins; free portions of the uppermost produced into a horizontal, ovate, subacute limb, of a deeper and brighter rose-purple. *Flowers* pale yellow. *Ovary* pubescent. *Calyx-tube* shorter than the corolla-tube, with three blunt lobes. *Corolla-tube* cylindric below, campanulate above; three outer lobes broadly ovate, concave, obtuse; two lateral inner lobes rather longer than the outer, rounded at the tips. *Lip* broadly reniform, two-thirds of an inch in diameter, short, recurved, split at the tip, darker yellow on the disk. *Anthers* short, projecting.—*J. D. H.*

Fig. 1, Fruit, and 2, side view of a flower; 3, anther, upper part of style, and stigma; 4, ovary and staminodes:—*all magnified.*

W. Fitch, del. et lith

Vincent Brooks Day & Son, imp

Tab. 5822.

ENKYANTHUS Japonicus.

Japanese Enkyanthus.

Nat. Ord. Ericeæ.—Decandria Monogynia.

Gen. Char.—*Calyx* parvus, 5-fidus. *Corolla* urceolata v. late campanulata, lobis 5 patentibus v. reflexis. *Stamina* 10, hypogyna, filamentis puberulis; antheræ 2-loculares, rimis longitudinalibus dehiscentes, 2-aristatæ, aristis patentibus. *Ovarium* ovoideum, 5-loculare; stylus subulatus, stigmate simplici; ovula numerosa, pendula, placentis angulo centrali loculorum affixis. *Capsula* erecta v. nutans, 5-gona, 5-locularis, loculicide 5-valvis, polysperma. *Semina* pauca, pendula, angusta, elongata, testa rugosa 3-alata, albumine parco; embryo gracilis.—Frutices Asiæ orientalis *incolæ*, *ramulis alternis v. subverticillatis*, *gemmis perulatis*. Folia ad *apices ramulorum conferta*, *persistentia v. decidua*, *integerrima v. serrulata*. Flores *axillares*, *ad apices ramulorum subumbellati*, *longe pedicellati*, *nutantes*, *bracteis latis membranaceis suffulti*.

Enkyanthus *Japonicus*; ramulis subverticillatis, foliis deciduis membranaceis breviter petiolatis elliptico-ovatis obovatisve acutis argute serrulatis, corolla alba globosa basi 5-saccata ore contracto lobis parvis revolutis, capsula angusta erecta.

This very elegant new species of the interesting Himalayan and Chinese genus *Enkyanthus*, was introduced from Japan by Messrs. Standish; by whom a living plant was presented to the Royal Gardens, from which the accompanying figure was made. It was discovered in 1859, by Sir Rutherford Alcock, and communicated by him to Sir W. Hooker's Herbarium from the neighbourhood of Nagasaki. It flowers in February, before the leaves are fully developed, but acquires its greatest beauty in autumn, when its foliage turns of a brilliant golden orange, diversified with redder spots.

Though hitherto only cultivated in the Temperate House at Kew, *E. Japonicus* is probably quite hardy, and if so, will

prove a most attractive ornament to the shrubbery. As a species it is more nearly allied to the Sikkim *E. Himalaicus*, both in the foliage and colour of the flowers, than to the original *E. quinqueflorus* of China, with which, however, it agrees in its erect capsule; it differs from both in the globose corolla with a very contracted mouth, and in the five large sac-like protuberances at its base.

Descr. A slender shrub; branches whorled, covered with brown bark, stiff, spreading. *Leaves* crowded at the ends of the branchlets, one and a half to two inches long, shortly petioled, elliptic ovate or obovate, acute, serrulate, deciduous. *Bracts* numerous, whorled, obovate-oblong, yellow-green, one quarter to half an inch long. *Flowers* numerous, drooping; pedicels two-thirds of an inch long, quite glabrous. *Calyx* of five small ovate subulate lobes. *Corolla* one-third of an inch in diameter, pure white, globose, intruded at the base, where there are five deep saccate projections; mouth much contracted; lobes small, broad, revolute. *Stamens* included; stigma exserted. *Capsules* erect, nearly half an inch long, narrow.—*J. D. H.*

Fig. 1, Flower; 2, calyx and pistil; 3, stamen:—*all magnified.*

W. Fitch. del. et lith.

Vincent Brooks, Day & Son. Imp.

Tab. 5823.

SOLANUM venustum.

Graceful Solanum.

Nat. Ord. Solaneæ.—Pentandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5424.)

Solanum *venustum*; fruticosum, inerme, ramis flexuosis glabris, foliis longiuscule petiolatis ovato-oblongis acuminatis basi rotundatis simplicibus vel inferne 2 vel 3-sectis integerrimis membranaceis supra pilis minutissimis conspersis subtus glabriusculis ciliolatis, petiolis interne hirtellis, paniculis simplicibus terminalibus tardius lateralibus cernuis, rachi ramisque flexuosis glabris, floribus longiuscule pedicellatis racemosis, calyce urceolato abbreviato–5-dentato glabro, corolla rotata profunde 5-fida, laciniis ovatis acutis villosulo-ciliatis, antheris brevibus liberis, ovario glabro.

Solanum venustum, *Kunth. Spec. Nov. Emend. Herb. Reg. Berol.*, p. 10. *Dunal in D. C. Prod.*, vol. xiii. p. 83.

This is one of the most graceful and free-flowering species of *Solanum* in cultivation. a native of Brazil, but of what province I am ignorant. The specimen here figured flowers in the cooler wing of the Palm House of the Royal Gardens, in November, and has been there for some considerable period, but unfortunately all record of its origin and sender's name is lost, and it is only through the description in De Candolle's Prodromus that it has been identified, there being no specimen of it in the Kew Herbaria. From the temperature at which it flowers under cultivation, it is probably a native of the southern provinces of Brazil or the La Plata district.

Descr. A slender unarmed climber, eight to ten feet high; stems branched, as thick as a crowquill, green, and as well as the leaves, minutely pubescent. *Leaves* membranous, bright green, alternate, on slender petioles, uppermost entire, ovate-lanceolate, narrowed into rather blunt apices; lower leaves and those about the inflorescence pinnately trifoliolate,

middle leaflet two to three and a half inches long, lateral alternate, much smaller, all shortly petioled. *Flowers* in drooping branched panicles three to five inches long; branches very slender, green, as are the pedicels. *Pedicels* swollen and conical at the apex. *Calyx* very small, five-angled, green. *Corolla* two-thirds of an inch in diameter, pale mauve, divided nearly to the base into five ovate-lanceolate, acute, glabrous, spreading segments. *Stamens* free, short, unequal in height; anthers broadly oblong, very obtuse, yellow, opening by two large terminal pores. *Ovary* ovoid, glabrous; style subulate.—*J. D. H.*

Fig. 1, Flower; 2, apex of peduncle and ovary; 3, stamen:—*all magnified.*

W. Fitch, del. et lith

Vincent Brooks Day & Son Imp

Tab. 5824.

ERYTHROCHITON HYPOPHYLLANTHUS.

Linden's Erythrochiton.

Nat. Ord. Rutaceæ.—Pentandria Monogynia.

Gen. Char.—*Calyx* magnus, tubuloso-campanulatus, coloratus, 5-angulatus v. costatus, inæqualiter fissus, 3-5-fidus v. partitus, lobis valvatis acutis. *Corollæ* tubus rectus v. curvus, lobis patentibus subæqualibus imbricatis v. induplicato-valvatis. *Discus* urceolatus. *Stamina* 5, omnia perfecta v. 1-3 ananthera, tubo corollæ agglutinata; antheræ lanceolatæ, erectæ, loculis basi simplicibus v. auriculatis. *Ovarium* alte 5-lobum, 5-loculare; stylus terminalis, stigmate capitato 5-lobo; ovula 2, superposita. *Capsula* 5-cocca, coccis 2-valvibus, endocarpio soluto elastice 2-lobo 1-2-spermo basi cum semine secedente. *Semina* subreniformia, sinu umbilicato, testa coriacea rugulosa opaca; albumen tenue, carnosum, plicis cotyledonum intromissum; cotyledones plicato-convolutæ, exteriore interiorem involvente; radicula breviuscula, incurva, clavata.—Frutices *glabri*, *subsimplices*. Folia *versus apicem caulis alterna, longissime obovato-lanceolata, integerrima*. Flores *hypophylli v. pedunculati, pedunculis axillaribus nunc foliiferis sæpissime elongatis angulatis*. Flores *speciosi, racemosi v. subfasciculati, calyce rubro, corolla alba v. rosea.*

Erythrochiton *hypophyllanthus;* foliis (floriferis) unifoliolatis cum petiolo 1-1½ pollicari nodoso-articulatis anguste cuneato-oblongis (1-1½ pedalibus) glaberrimis obtuse acuminatis margine integro irregulariter repandis, cymis 1-3-floris e costa media subtus enatis, staminibus fertilibus 2-3 sterilibus liguli-formibus. *Planch.*

Erythrochiton hypophyllanthus, *Planch and Linden in Ann. Sc. Nat. sér. III.* vol. xix. p. 75.—*Planch in Mem. Acad. Stanislas, de Nancy.* 1853.

This very remarkable plant was discovered by Schlim, in rocky ravines, in the province of Ocaña, in New Granada, at an elevation of 2500 feet above the sea; and was imported by M. Linden, of Brussels, from whom the Royal Gardens received it some years ago. It flowered for the first time at Kew in 1864, and has done so almost annually since, the plant attaining meanwhile a height of about five feet. In the position of the flowers, which are always produced at the

back of the leaf, it presents a remarkable contrast to the *E. Brasiliense* (Tab. Nost. 4742); it is further a much less attractive plant, wanting the bright red calyces and copious flowers which render the other so ornamental. The position of the flowers upon the midrib of the leaf varies, as they are sometimes produced not far above the petiole (fig. 3), and are often subtended by a second leaf, the upper surface of which faces the back of that from which they both spring.

Descr. Quite glabrous. *Stem* very slender, unbranched. *Leaves* obovate-lanceolate, ten to eighteen inches long, subacute, quite entire, many-nerved; petiole very short, swollen at the base and top. *Flowers* one to three, from the back of the midrib of the leaf, shortly peduncled, white. *Calyx* subcylindric, an inch long, green; lobes short, subacute. *Petals* oblong-ovate, obtuse. *Ovary* concealed in the cup-shaped disk; stigma five-lobed.—*J. D. H.*

Fig. 1, Reduced view of the entire plant; 2, leaf and inflorescence; 3, portion of another leaf, with flower and accessory leaf; 4, corolla laid open; 5, ovary and disk; 6, disk laid open; 7, transverse section of ovary. Figs. 4–7 *magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5825.

DENDROBIUM lasioglossum.

Hairy-lipped Dendrobe.

Nat. Ord. Orchideæ. Gynandria Monandria.

Gen. Char. (*Vide Supra* Tab. 4755.)

Dendrobium *lasioglossum*; caulibus fasciculatis gracilibus foliosis, internodiis elongatis teretiusculis, foliis planis lanceolatis acuminatis, floribus albis ad nodos sub 3-nis in pedunculo brevi aggregatis, bracteis minutis ovatis obtusis, sepalis late ovatis subacutis, petalis paulo brevioribus obtusis, labelli limbo infundibuliformi in calcar brevem truncatum 2-lobum producto, lobis lateralibus rotundatis erosis purpureo lineolatis, intermedio subquadrato undulato disco villoso-flavo.

Dendrobium lasioglossum, *Reichb. f.* in *Gard. Chron.* 1868, p. 682.

Discovered by Col. Benson in the forests of Birma, and communicated by him to Messrs. Veitch and the Royal Gardens, where, and in the rich collection of Wentworth Buller, Esq., it flowered in the month of February, 1868. Reichenbach states that it is allied to *D. Ruckeri*, Lindl., a Philippine Island plant, which differs chiefly in the yellow colour of the flowers. As a species, however, it seems very distinct from that, and from any other.

Descr. Glabrous. *Stems* tufted, slender, ten to eighteen inches long, pendulous; internodes two to three inches long, terete, a quarter to one-third inch diameter, scarcely swollen in the middle, upper and lowermost the most slender. *Leaves* three to five inches long, alternate, lanceolate, acuminate, flat, bright green, nerves obscure. *Flowers* in very short two to three-flowered racemes at the nodes; bracts one-eighth of an inch long, ovate, obtuse, appressed. *Peduncles* flexuous, curved, half an inch long, greenish-white. *Ovary* short, green. *Perianth* one and a half inches diameter, spreading, all

white except the reddish streaks on the lateral lobes of the lip and tuft of yellow hairs in the disk. *Sepals* two-third inch long, broadly ovate, subacute. *Petals* rather smaller, broader, obtuse. Lip funnel-shaped, with two rounded, erect, erose, lateral lobes, and a reflexed mid-lobe, which is subquadrate, notched, has undulate margins, and a mass of yellow villous hairs on the disk; spur very short, obtuse, bilobed. *Column* very short, hollow, and streaked with purple in front.—*J. D. H.*

Fig. 1, Flower with the sepals and petals removed; 2, front view of lip; 3, column and spur:—*all magnified.*

W Fitch del et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5826.

PARANEPHELIUS uniflorus.

Single-flowered Paranephelius.

Nat. Ord. Compositæ.—Syngenesia Superflua.

Gen. Char.—*Capitulum* multiflorum, heterogamum. *Involucri* pluriseriati squamæ imbricatæ, interiores angustissimæ. *Receptaculum* breviter fimbrilliferum. *Flores* radii uniseriati, ligulati, fœminei; filamentis 2-5 longe exsertis anantheris; disci hermaphroditi, tubulosi. *Corollæ* villosæ, disci tubulosæ, limbi quinquepartiti laciniis oblongis tubo brevioribus; radii ligulatæ, tubo longo, ligula oblonga tridentata. *Stylus* disci basi bulboso-incrassatus, profunde bifidus, ramis elongatis revolutis dense hispidis; radii ramis abbreviatis. *Achænia* ovalia, sulcata, glabra, apice concava, callo basilari; pappus multiseriatus, setis æqualibus rigidis hispidis—Herbæ *acaules, in excelsis* Andium Peruviæ *et* Boliviæ *hucusque solum visæ.* Folia *rosulata, dentata v. pinnatilobata, subtus niveo-tomentosa.* Capitula *majuscula,* ***solitaria, lutea.***

Paranephelius uniflorus, *Pœpp. and Endl. Nov. Gen. and Sp. Pl. Chil.* vol. iii. p. 42, *t.* 248. *Walp. Ann.* vol. vi. p. 103. *Weddell, Chloris Andina,* **vol. i. p. 213.**

A very beautiful hardy or half-hardy composite, remarkable for the brilliant golden colour of the flowers and the bright-green reticulated foliage, which is snowy-white underneath. It is a native of the Peruvian and Bolivian Andes, and was raised from seed by W. W. Saunders, F.R.S., to whom I am indebted for the specimen here figured. It appears to be thoroughly Alpine, inhabiting rocky places at 14,000 to 18,000 feet elevation; and, like most such plants, is very variable. Three species of the genus are described: *P. uniflorus*, P. & E.; *P. bullatus*, Wedd., and *P. ovatus*, Wedd., (*ovalifolius*, A. Gray); but I suspect that these are all varieties of one. The present does not exactly accord with any; but the main, if not only differences, arise from luxuriance of growth; these are the elongated stem, robust habit,

longer petioles, and deeper lobing of the leaf. These characters are very analogous to what are found in the *Carduus acaulis* of our pastures, with the habit of which the *P. uniflorus* is compared by its original describers.

DESCR. *Root* fusiform, perennial. *Stem* none, or two to four inches high. *Leaves* radical and cauline, obovate or obovate-lanceolate, deeply and irregularly acutely sinuate-toothed or subpinnafidly-lobed, with acutely toothed lobes; dark green and rugose above, with sunk veins, snow-white, with appressed tomentum beneath. *Flowering-stem* or peduncle stout, cylindric, densely tomentose. *Involucre* campanulate; surrounded by leaf-like, recurved, green bracts; involucral bracts linear-oblong, obtuse, or acute. *Flower-heads* two to three and a half inches in diameter; ray bright golden-yellow; disk orange; ligules spreading, very numerous, in one series, one to one and a half inches long, pilose beneath; disk-flowers with a slender tube, campanulate limb, and five narrow lobes. *Anthers* with obscure tails. *Style-arms* slender, revolute. *Pappus*-hairs very slender, rigid, reddish.—*J. D. H.*

Fig. 1, Ray-flower; 2, disk-flower; 3, stamen; 4, style-arms; 5, pappus-hair:—*all magnified.*

W. Fitch, del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5827.

LINARIA tristis.

Sombre-flowered Toad-flax.

Nat. Ord. Scrophularineæ.—Didynamia Angiospermia.

Gen Char. (*vide supra*, Tab. 5733.)

Linaria (*sect.* Linariastrum) *tristis ;* inflorescentia glanduloso-puberula, cæterum glabra, ramis floriferis decumbentibus basi ramosis, foliis lineari-oblongis linearibusve crassiusculis plerisque alternis, pedicellis brevissimis, calycis segmentis oblongis v. lineari-spathulatis obtusis, calcare lente arcuato corolla breviore infundibuliformi apice subincurvo.

Linaria tristis, *Mill. Ic. t.* 166. *Benth. in D. C. Prod.* vol. x. p. 281.

Antirrhinum triste, *Linn. Syst. Veg.* p. 465.

Antirrhinum ærugineum, *Gouan. Ill.* p. 38.

This charming little hardy plant was sent to the Royal Gardens last spring by G. Maw, Esq., F.L.S., from the Rock of Gibraltar, and flowered in the following July. It is a native of walls and stony places in various places in the south of Spain, and is also found in the Canary Islands. We have native specimens from the walls of the convent of Corunna, from the Sierra de Yunguera and Sierra de Gadoz, as well as from St. Roque and Gibraltar. Being a very free flowerer, and conspicuous for its glaucous foliage and the singular hues of its corolla, it is likely to become a favourite rock plant.

Descr. Glabrous, very glaucous. *Stems* numerous from the root, decumbent at the base, then ascending, four to eight inches long, simple or sparingly branched, leafy. *Leaves* spreading, three-quarters to one inch long, radical narrowly linear-spathulate, cauline more linear, subacute, quite entire. *Raceme* two to three inches long, sub-cylindric, densely many-flowered; bracts linear, leaf-like; peduncles, pedicels, and calyx glandular-pubescent. *Flowers* shortly pedicelled, erect, an inch long from the tip of the spur to the top of the

upper lip. *Sepals* narrowly ovate, or obovate oblong, subacute. *Corolla* dirty yellow, with dark maroon purple palate and lower lip, and pale purple upper lip; spur funnel-shaped, tip subacute, slightly incurved; throat broad; palate with two pubescent hemispheric bosses; lower lip very short, two-lobed, margins recurved; upper lip erect, broadly ovate, broader than long, bifid.—*J. D. H.*

Fig. 1, Flower magnified.

W Fitch. del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5828.

ŒNOTHERA MARGINATA.

Red-nerved Evening Primrose.

Nat. Ord. Onagrarieæ.—Octandria Monogynia.

Gen. Char.—*Calycis* tubus linearis v. clavatus, 4-gonus, supra ovarium in tubum cylindricum brevem v. elongatum superne dilatatum 4-lobum deciduum productus. *Petala* 4, obovata v. obcordata, vix unguiculata. *Stamina* 8, æqualia v. alterna breviora, filiamentis filiformibus; antheræ lineares, sæpius elongatæ. *Ovarium* 4-loculare; stylus filiformis, stigmate integro 4-lobo v. 4-partito; ovula ∞, horizontalia v. adscendentia. *Capsula* varia, membranacea coriacea v. sublignosa, linearis oblonga v. clavata, teres 4-gona v. polygona, multicostata v. late 4-alata, 4-locularis v. rarius ob septa evanida 1-locularis, valvis medio septiferis ab axi seminifero solutis, interdum evalvis. *Semina* plurima v. pauca, forma et testa varia.—Herbæ, *rarius* fruticuli, *habitu variabiles, sæpissime erectæ ramosæ foliosæ, rarius scapigeræ.* Folia *alterna, membranacea, sessilia v. petiolata, integra dentata lobata v. pinnatifida.* Flores *axillares, solitarii, sessiles v. pedunculati, rarius 2-ni v. in capitulum congesti, sæpe speciosi, flavi rosei v. purpurei.*

Œnothera *marginata;* subacaulis, cæspitosa, villoso-pubescens, foliis lanceolatis longe petiolatis sinuato-dentatis vel runcinato-pinnatifidis, marginibus tomentosis, nervis subtus rubris, floribus amplis sessilibus, calycis tubo longissimo lacinias longe excedentibus, petalis amplis latissime obcordatis albis, capsulis breviter pedicellatis oblongo-cylindraceis costatis obscure 4-gonis, marginibus valvarum lente tuberculatis.

Œnothera marginata, *Nutt. Mss. in Hook and Arn. Bot. Beech. Voy. Suppl.*, p. 343. *Torr and Gray, Fl. N. Am.* vol. i. p. 500.

A magnificent hardy Evening Primrose, admirably adapted for a rockery, conspicuous for its bright green foliage, the ribs and petiole of which underneath are often of a blood-red colour; as also for the very large and handsome flowers, fully four inches in diameter, which are produced in succession, and in considerable numbers. It is a native of the Rocky Mountains, in Upper California, where it was discovered by Nuttall in 1842; and it has also been found in the Snake

country by Tolmie, on the Oregon by Burke, and on the Upper Missouri by Geyer. The specimen here figured, flowered in the Royal Gardens in June, 1869, and has been for some years in cultivation.

Descr. Stemless. *Root* woody, fusiform. *Leaves* numerous, three to six inches long, including the slender petiole, more or less covered below or on both surfaces and margins with soft pubescence, very variable in length and breadth, acute or obtuse, subentire, toothed or pinnatifid. *Flowers* axillary, subsessile. *Calyx*-tube very long and slender, three to six inches long, tumid at the base, narrowly funnel-shaped at the top; lobes one to two inches long, subulate-lanceolate, acuminate, carmine or greenish. *Petals* very variable in size, about as long as the sepals, in our specimens two inches across, broadly obcordate, white, pale pink in bud. *Filaments* nearly equal, slender, green; anthers narrow, yellow. *Style* very slender, with four spreading, narrow stigmas. *Capsule* an inch long, oblong-cylindric, obscurely four-angled, four-ribbed. *Seeds* ovoid, gibbous, grooved along the inner side. —*J. D. H.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5829.

CLAVIJA macrophylla.

Large-leaved Clavija.

Nat. Ord. Myrsineæ. Pentandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5626.)

Clavija *macrophylla;* foliis per intervalla confertis breviter petiolatis coriaceo-membranaceis majoribus et minoribus permixtis, illis obovato-oblongis breviter acuminatis obtusis vel emarginatis basi cuneatis marginibus haud incrassatis acute sinuato-dentatis, dentibus vix pungentibus, foliis minoribus magis lanceolatis, nervis patentibus subparallelis præsertim subtus tenere reticulatis, racemis flaccidis laxifloris tenuibus, bracteis ad pedicelli basin vel in medio insertis, floribus pedicellatis fere omnibus tetrameris, drupis siccis globosis brevirostellatis.—*Miq.*

Clavija macrophylla, *Miquel in Mart. Fl. Brazil*, fasc. xvi. p. 275, t. 24.

Theophrasta macrophylla, *Link. Herb.* T. serrata, *Hoffmansegg, Verzeichn.* 2 ann. 1826, p. 18?

The subject of the present plate, a native of Brazil, was flowered by W. Wilson Saunders, Esq., F.R.S., of Reigate, in July last, and has been referred, though with some doubt, to *Clavija macrophylla* of Miquel. It agrees entirely with that plant in habit and foliage (which forms a magnificent crown of eighteen to twenty leaves in the specimen figured) in the copious racemes (of which there were twenty-six in this specimen), and in the tetramerous flowers with very small calyx and minute subulate bracts half-way up the pedicel; but it differs from Miquel's description in the corolla being orange-yellow, instead of white with a scarlet median nerve. I cannot help suspecting, however, that the latter character, apparently taken from notes attached to dried specimens, has originated in a mistake; the flowers being yellow or orange in the closely allied *C. ornata*, and in all

other species known to me. Mr. Saunders's plant was sent to him from the neighbourhood of Rio, by the late C. Bowman, Esq., and was grown in a cool stove in a mixture of loam and peat: it is a slow grower, making a whorl of sixteen to eighteen leaves annually. According to Miquel, this species extends from the Amazons and Rio Negro to Rio de Janeiro, and flowers in the month of December.

Descr. *Stem* five to six feet high, stout, erect, glabrous, covered with ashy-grey bark. *Leaves* crowded at the top of the stem, very numerous, large and small irregularly mingled, the former twelve to twenty inches long, the latter four to eight; all sessile, obovate-lanceolate, gradually tapering to a very long base, acuminate, spinous-serrate, deep green above, paler beneath, with very numerous horizontal reticulate veins. *Racemes* axillary, five to eight inches long, slender, very many flowered; pedicels slender, one-third to one-half inch long, with a minute subulate bract in the middle. *Calyx-lobes* small. *Corolla* one-fourth inch in diameter, subglobose, bright orange-yellow; lobes four, orbicular, not spreading. *Stamens* four. *Style* short, stigma capitate.—*J. D. H.*

Fig. 1, Male flower; 2, ditto with the calyx and corolla removed; 3, vertical section of ditto:—*all magnified.*

2.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5830.

STYLOPHORUM JAPONICUM.

Japanese Stylophorum.

Nat. Ord. Papaveraceæ.—Polyandria Monogynia.

Gen. Char.—*Sepala* 2. *Petala* 4. *Stamina* indefinita. *Ovarii* placentæ 2-4, nerviformes; stylus distinctus, apice lobato-dilatatus, lobis 2-4 erectis cum placentis alternantibus sinubusque deflexis undique stigmatosis. *Capsula* sæpius stipitata, ovoidea, oblonga v. linearis, ab apice ad basin dehiscens, valvis placentas cum stylo persistentes nudantibus. *Semina* scrobiculata, raphe cristata. Herbæ, *rhizomate perenni, succo flavo.* Folia *radicalia pinnatifida v.* 0, *caulina pauca, alterna v. floralia subopposita, lobata v. dissecta, tenera.* Flores *flavi v. rubri, pedunculis elongatis solitariis v. subfasciculatis, alabastris nutantibus.*

Stylophorum *Japonicum;* fere glaberrima, foliis radicalibus longe petiolatis pinnatisectis, foliolis bijugis cum impari ellipticis lanceolatisve grosse inæqualiter serratis, caulinis apicem versus caulis breviter petiolatis 3-5-jugis, floribus axillaribus solitariis binisve, sepalis acuminatis, petalis late obovatis, capsula anguste elongata, stylo breviusculo.

Stylophorum Japonicum, *Miq. Prolus. Fl. Japon.*, p. 199.

Chelidonium Japonicum, *Thunb. Fl. Japon.*, p. 221.

C. uniflorum, *Sieb. and Zucc. Abhandl. Baier. Akad. Wissensch.*, v. iv. 2, p. 169. *Walp. Ann.* 1, 956.

Hylomecon vernale, *Maxim. Prim. Fl. Japon.*, p. 36, t. 3.

An elegant, hardy perennial, closely allied to our Greater Celandine, but with flowers twice as large. A native of Japan and the countries bordering the Amoor river in N.E. Asia. It was received from the Imperial Gardens at St. Petersburgh, and flowered in a cool frame in May of last year.

Descr. *Rootstock* slender, tortuous, branched, sending up from the extremity of each branch one or two very long-petioled leaves, and a slender erect stem, twelve to eighteen inches high, which bears at the top two or three leaves, with axillary flowers, and at the base a few short amplexicaul,

rounded, brown sheaths. *Leaflets* at the summit of the petiole, two in opposite pairs and an odd one, subsessile, elliptic or lanceolate, acuminate, dark-green, irregularly serrate; terminal two to two and a quarter inches long, rather longer than the others, more narrowed at the base, sometimes obscurely lobed; cauline leaves similar, but shortly petioled; more rarely the leaves have five to six pairs of leaflets, when the upper pair are broader, sometimes lobed at the base, and the lower pairs are alternate, and exceedingly irregular in size and form. *Flowers* one and a half to two inches in diameter, yellow, axillary, usually in pairs; pedicel one to one and a half inches long, erect; buds inclined, ovoid, acuminate. *Sepals* membranous, very deciduous. *Petals* broadly obovate, spreading, rounded at the tip. *Stamens* short, orange-yellow. *Capsule* one and a half to two inches long, very slender, terete.—*J. D. H.*

Fig. 1, Stamen; 2, ovary :—*both magnified.*

W Fitch. del et lith.

Vincent Brooks Day & Son. Imp.

Tab. 5831.

NARCISSUS BULBOCODIUM, var. MONOPHYLLUS.

Hoop-petticoat Narcissus, Single-leaved Variety.

Nat. Ord. Amaryllideæ.—Hexandria Monogynia.

Gen. Char.—*Perigonium* corollinum, campanulatum conicum v. hypocrateriforme, lobis 6 patentibus v. reflexis. *Corona* infundibuliformis campanulata v. rotata. *Stamina* 6, tubo perigonii 2-seriatim inserta, inclusa, filamentis brevissimis; antheræ oblongæ. *Ovarium* 3-loculare; stylus filiformis, stigmate obtuso; ovula pluriseriata. *Capsula* membranacea, 3-gona, loculicide 3-valvis. *Semina* subglobosa, testa atra. — Herbæ Europeæ, *bulbo tunicato*. Folia *angusta*. Scapi *teretes compressi v. angulosi*. Spatha 1-*phylla*, 1-∞ *flora*. Flores *speciosi*, *albi v. flavi*.

Narcissus *Bulbocodium;* bulbo ovoideo, foliis 1-3 anguste linearibus ½-teretibus, scapo gracili 1-floro, perianthio ascendente v. horizontali pedicellato, tubo conico flavo, corona magna tubum æquante, lobis linearibus ascendentibus acutis, filamentis recurvis.

Var. *monophylla;* folio angustissimo sub-solitario, ovario subsessili, flore pallido-stramineo, corona crenulata, stylo exserto.

Narcissus bulbocodium, *var.* monophylla, *Baker* in *Gard. Chron.*, ann. 1869, p. 529.—N. Clusii, *Dunal, Mem. Acad. Sc. Mont.*, p. 9 and 6. *Kunth. Enum.* v. v., p. 897. *Walp. Ann.* i. p. 836.

Corbularia monophylla, *Durieu in Duchart. Rev. Bot.*, ii. 425; Kunth. *l. c.; Explor. de l'Algérie, Bot.* t. 47, f. 2.

A very elegant little plant, referred by Mr. Baker to a variety of the well-known Hoop-petticoat Narcissus of the S. of Europe, but differing from the typical form of that plant in the solitary leaf and nearly white flower. It is a native of Algiers, whence bulbs were sent to the Royal Gardens by Col. Playfair, Consul-General. It flowered in a cool frame, in January of the present year.

Descr. *Bulb* size of a small hazel-nut, globose; scales sooty brown, shining. *Leaf* solitary, rarely two, four to six inches

long, very narrow, semi-terete, with a shallow channel in front, dark-green. *Scape* half as long as the leaves, obscurely trigonous. *Flower* very shortly pedicelled, ascending or horizontal, an inch and a quarter long, very pale yellow. *Perianth-tube* conical, two-thirds of an inch long; lobes linear, spreading, acute, about equalling the tube; corona very large, an inch and a quarter in diameter, hemispheric, margin crisped and lobed. *Filaments* upcurved at the apex. *Stigma* exserted.—*J. D. H.*

Fig. 1, Stamens, ovary, and style; 2, transverse section of leaf;—*both magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5832.

RHYNCHOTECHUM ELLIPTICUM.

Elliptic-leaved Rhynchotechum.

Nat. Ord. Cyrtandreæ.—Didynamia Angiospermia.

Gen. Char.—*Calyx* 5-fidus, æqualis, lobis lanceolato-subulatis. *Corolla* tubo brevi subcampanulato, limbo hiante 2-labiato, labio superiore 2-lobo inferiore paulo majore 3-lobo, lobis omnibus subæqualibus rotundatis. *Stamina* 4, didynama, inclusa, omnia fertilia, filamentis brevissimis; anatheræ parvæ 2-loculares, liberæ, loculis confluentibus. *Ovarium* disco annulari impositum; stylus incurvus, stigmate obtuso. *Fructus* baccatus, globosus, calyce cinctus, septi carnosi lobis revolutis seminiferis. *Semina* minuta. Frutices Javanæ *et* Indiæ maxime orientalis *incolæ; caule simplici, tereti, medulla ampla; cortice spongioso.* Folia *opposita.* Corymbi *axillares, dichotomi, pedicellis gracilibus.* Flores *parvi, rosei.* Fructus *parvus, albus.*

Rhynchotechum *ellipticum;* caule simplici robusto superne pedunculis petiolis foliisque subtus molliter fulvo lanuginosis, foliis obovato-lanceolatis ellipticisve acutis crenato-dentatis, corolla rosea fauce purpurea, lobis rotundatis.

Rhynchotechum ellipticum, *A. DC. in DC. Prodr.* vol. ix. p. 285 *in nota.*
Corysanthera elliptica, *Wall. Cat.* No. 6411.

This genus was established by Blume, on a mountain plant of the island of Java; but the species here described was subsequently discovered by Wallich's collectors in the Silhet district of Eastern Bengal, inhabiting damp forests. It also occurs in Assam, where it was detected by Griffith, and extends to the Sikkim Himalaya, whence seeds were sent by Mr. Gammie to the Royal Gardens, Kew, from which the plant here figured was raised. A third species, from the island of Penang, is preserved in the Hookerian Herbarium; as is a fourth, or possibly a variety of *R. ellipticum*, which was discovered by Mr. Parish on the granite mountain of Tinjake, in Martaban; and a fifth discovered by Dr. Thomson and myself in the Silhet jungles. All agree

in their suffruticose, unbranched habit; in the stout, brittle, terete stem, with very thick pith and white spongy bark; in the small corymbose pink flowers, being produced from the stem, chiefly below the leaves; and which are succeeded by small white transparent berries. They are probably biennial in duration, as our plant, which flowered in an intermediate stove, died soon afterwards.

Descr. *Stem* two to three feet high, simple, erect, flexuous, terete, as thick as a swan's quill; upper part, petioles, young leaves below, nerves of the old leaf, and inflorescence, covered with a soft buff-yellow wool. *Leaves* opposite, six to ten inches long, shortly petioled, obovate-lanceolate or elliptic, acute, narrowed into the petiole, obtusely toothed; nerves numerous, parallel, diverging. *Corymbs* crowded at the nodes beneath the leaves, much branched, branches very slender, divaricating; bracts at the forks, subulate, small. *Calyx-lobes* one-fourth inch long, subulate-lanceolate, acuminate. *Corolla* one-third inch in diameter, bright pink, with a two-lobed, blood-red spot at the base of the upper lip; upper lip rather smaller, broadly two-lobed, lower lip three-lobed, lobes subequal, orbicular. *Stamens* inserted at the base of the corolla-tube, filaments very short; anthers subglobose, dark purple. *Ovary* ovoid, narrowed into a short, subulate, curved style. *Disk* annular. *Berry* one-third inch in diameter, subglobose, white, transparent, many-seeded.—*J. D. H.*

Fig. 1, Side; 2, front view of flower; 3, corolla laid open; 4, ovary and disk; 5, transverse section of ditto:—*all magnified.*

W. Fitch, del et lith.

Vincent Brooks Day & Son, Imp.

Tab. 5833.

ORTHOSIPHON stamineus.

Long-stamened Orthosiphon.

Nat. Ord. Labiatæ.—Didynamia Gymnospermia.

Gen. Char.—*Calyx* ovato-tubulosus, 5-dentatus, dente superiore ovato membranaceo marginibus sæpius decurrentibus, post anthesin deflexus. *Corolla* tubo exserto recto v. incurvo nec gibboso nec defracto, fauce æquali v. rarius inflata, labio superiore 3-4-fido, inferiore integerrimo concavo. *Stamina* 4, filamentis liberis edentulis. *Stylus* filiformis, stigmate emarginato v. 2-labiato. *Nuculæ* punctulatæ v. tuberculatæ.—Herbæ *perennes suffruticesve tropici*, Asiatici, Americani, *et* Africani. Racemi *simplices*, *sæpius elongati*. Verticillartri 2-10 *flori*, *distantes*, *laxi*. Folia *floralia bracteæformia*, *reflexa*. Pedicelli ***fructiferi recurvi***.—**Benth.**

Orthosiphon *stamineus*; caule herbaceo suberecto ramoso, foliis petiolatis ovatis v. rhombeo-ovatis basi cuneatis cordatisve grosse crenato-dentatis, racemis elongatis, corollæ tubo recto angusto elongato calyce triplo longiore, labio inferiore anguste-oblongo porrecto, superiore plano maximo 3-lobo refracto, filamentis longissime porrectis.

Orthosiphon stamineus, *Benth.* in *Wall. Pl. As. Rar.* vii. p. 17, *et in DC. Prod.* v. xii. p. 52. *Masters* in *Gard. Chron. ann.* 1869, p. 941 *cum Ic. xylog.*

Ocimum grandiflorum, *Blume*, *Bijd.* p. 835, *non L'Herit.*

As Bentham well remarks in his description of this plant, and Masters in his notice of its introduction (Gard. Chron. l.c.), it resembles in its inflorescence a *Clerodendron*, far more than its allies, the *Basil*, *Coleus*, or *Mint*. It is a very widespread Eastern plant from Assam and Birma to the Philippine Islands, and from the Nicobars and Siam to Java, Borneo, and Cape Goole in North-East Australia. It was introduced from the latter locality by Mr. John Veitch, from whose specimens, which flowered in the Royal Exotic Nurseries in July of last year, the accompanying drawing was

made; and the Royal Gardens have also received it from the Rev. Mr. Parish of Moulmayne. It need hardly be observed that it is a stove plant, a profuse flowerer, and of very pretty appearance.

Descr. A herb one to two feet high, erect or decumbent, the base sparingly branched, pubescent or glabrate, branches 4-gonous. *Leaves* in rather distant pairs, short- or long-petioled, one to three inches long, ovate or rhombic ovate, cuneate or cordate at the base, usually deeply and irregularly crenate-toothed, sometimes almost entire, at others almost lobulate, dark green above, paler beneath. *Racemes* simple, slender, five to ten inches long, erect, very many-flowered. *Flowers* six to ten in a whorl; bracts small ovate; pedicels slender, one-quarter inch long. *Calyx-tube* short, base rounded, upper lip orbicular erect; lower with two long subulate middle teeth, and two short broad auricled mucronate lateral ones. *Corolla* blue-lilac; tube half an inch, straight, slender; lips equalling the tube; lower narrow, oblong, concave, horizontal; upper as long, broad, recurved, 3-lobed at the top, midlobe notched. *Stamens* blue, one to one inch and a quarter long; anthers minute, dark. *Style* as long, with two minute oblong lips. *Disk* tumid, produced into an incurved erect lobe at the back. *Nutlets* oblong, tuberculate.—*J. D. H.*

Fig. 1, Leaf; 2, flower; 3, corolla laid open: 4, anther; 5, calyx: 6, stigma; 7, disk and ovary :—*all magnified.*

W Fitch, del. et lith

Vincent Brooks Day & Son

Tab. 5834.

VANDA cærulescens.

Pale Blue Vanda.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5174.)

Vanda *cærulescens*; caule elongato folioso, foliis angustis loratis truncato-bilobis profunde carinatis, scapis distanter vaginatis pendulis, racemis elongatis multifloris, pedunculis trigonis, sepalis petalisque pallide cæruleis patentibus incurvis subundulatis obovato-spathulatis subunguiculatis, labello parvo, lobis lateribus minutis columnæ adnatis, lobo intermedio-obcuneato apice subdilatato emarginato, marginibus deflexis disco violaceo callis 2 elongatis crassis carinæformibus instructo, calcare **labello paulo breviore incurvo subacuto.**

Vanda cærulescens, *Griff. Notulæ*, p. 352; *Ic.*, t. 331; *Lindl. Fol. Orchid. Vanda*, p. 9; *Walp. Ann.*, vol. vi. p. 868.—*Gard. Chron.*, 1870, p. 529, **Fig. 97.**

It has long been known that a second blue Vanda, allied to the celebrated *Vanda cærulea*, but much smaller in all its parts, had been discovered by Griffith near Bamo, in Birmah, so long ago as 1837; but nothing further was known of the plant until it was rediscovered by Colonel Benson in 1867, when he communicated specimens and a coloured figure to the Kew Herbarium, from hills near Prome, at an elevation of 1500 feet above the sea. Thanks to his energy, live specimens were shortly afterwards sent to Messrs. Veitch, which flowered in the Royal Exotic Nursery, Chelsea, in March of the present year, and from which the accompanying drawing was made. Though by no means comparable either for size or colour with *Vanda cærulea*, it is a very elegant plant, and well worthy of cultivation.

Descr. Stems one to two feet long, as thick as the little finger, woody, with long, stout, flexuous roots at the bases of the leaves. *Leaves* numerous, distichous, dense, five to

seven inches long, three-quarters to one and a quarter broad deeply channelled above, very coriaceous, strongly keeled at the back, the keel increasing in size towards the tip, where it forms an angular projection; tip of the leaf abruptly truncate and two-lobed, the lobes ending in rigid angular points. *Racemes* many, axillary, pendulous, five to seven inches long, on peduncles of equal length, green, with one or two small appressed sheaths; peduncles spreading, together with the slender ovaries one and a quarter inches long, a slightly redder lilac than the rest of the flower. *Flowers* one to one and one-third inch diameter; sepals and petals subequal, spreading, incurved, rather undulate or twisted, obovate-spathulate, subacute, pale blue-lilac inside, rather darker outside. *Lip* rather smaller than the petals, three-lobed; two lateral lobes small, dark blue, adnate to the sides of the very short dark blue column; mid-lobe projecting, between obovate and cuneate; margins deflexed, of the same colour as the petals; tip rather dilated, rounded, notched; disk violet-blue, with two thick, smooth, obtuse ridges, and a short basal intermediate one; spur shorter than the lip, incurved, subacute, blue-lilac; anther yellow.—*J. D. H.*

Fig. 1, Flower with the sepals and petals removed;—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks Day & Son Imp

Tab. 5835.

ACACIA RICEANA.

Mr. Spring-Rice's Acacia.

Nat. Ord. Leguminosæ.—Polygamia Monœcia.

Gen. Char. (*Vide supra*, Tab. 5191.)

Acacia *Riceana*; arbuscula glaberrima, ramulis pendulis angulatis gracilibus apicibus tomentosis, phyllodiis anguste linearibus lineari-subulatisve sparsis subverticillatisve acuminato-pungentibus uninerviis, pedunculis elongatis gracilibus dissitifloris phyllodia superantibus, bracteolis brevibus, calyce brevissimo 3-lobo, floribus majusculis, leguminibus gracilibus linearibus valde curvis petalis persistentibus suffultis.

Acacia Riceana; *Henslow* in *Maunder's Botanist*, vol. iii. No. 135; *Hook. f. Fl. Tasmanica*, vol. i. p. 106; *Benth., Fl. Austral.*, vol. ii. p. 335.

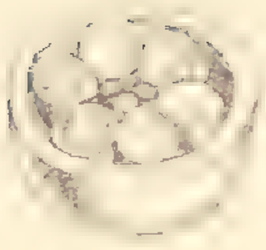
Acacia *setigera*, *Hook., Ic. Pl.*, tab. 316.

This is by far the most beautiful Acacia of Tasmania, to the southern parts of which island it seems to be confined; growing like a weeping willow on the banks of the streams that fall into the Derwent. It was discovered by Robert Brown in the early part of the century, but it was not till nearly forty years afterwards that it was made known in this country; firstly by specimens communicated to Sir Wm. Hooker by Ronald Gunn, Esq., F.R.S., and afterwards from seeds sent to the Right Hon. T. Spring Rice (then Chancellor of the Exchequer, afterwards Lord Monteagle); in honour of whom it was named. It is remarkable that so fine a greenhouse ornament should be comparatively rare in cultivation; for its deep green perennial foliage, its long whip-like pendent branches, clothed with golden flowers, the facility with which it can be trained over columns and arches, and the length of time during which it remains in flower, render it one of the most desirable acquisitions for a

conservatory. In the form of the leaves, and in certain other characters, it so closely resembles certain states of *Acacia mucronata*, that they are often mistaken for one another; but besides the great difference in habit, there is no resemblance whatever between their pods. For cuttings of the true plant, the Royal Gardens are indebted to Mr. H. Knight, gardener to His Grace the Duke of Roxburghe, at Floors Castle, where a single plant festoons the glazed corridor for full 50 feet of its length, flowering during many months of the year, from March or April onwards.

Descr. A very handsome small dark-green tree, ten to twenty feet high, with copious pendulous slender branches, which are villous at the apices only. *Phyllodia* scattered or whorled, laterally appressed, very narrow, one to two inches long, linear, acuminate, pungent, less rigid than in its congeners of this section, one-nerved. *Stipules* minute, broadly ovate, membranous. *Peduncles* slender, divaricating, longer than the phyllodia. *Flowers* large for the genus, solitary or aggregated by two or three together along the very slender pendulous peduncle. *Bracts* small, appressed to the base of the flower, ciliate. *Calyx* very minute, cup-shaped, three-lobed; lobes ciliate. *Petals* generally three, persistent, glabrous. *Pods* two to three inches long, narrow, much curved, shortly stalked, retaining at their bases the persistent petals; valves very convex, coriaceous, contracted between the seeds. *Seeds* oblong, longitudinal; funicle much folded, and thickened nearly from the base.—*J. D. H.*

Fig. 1, Phyllode; 2, bud; 3, leaf; 4, pod:—*all but* 4 *magnified.*



W Fitch del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5836.

ARENARIA PURPURASCENS.

Purple Alpine Sandwort.

Nat. Ord. Caryophylleæ.—Decandria Trigynia.

Gen. Char.—*Sepala* 5, rarius 4. *Petala* totidem, integra v. leviter emarginata v. rarius 0. *Stamina* 10, rarius 8, v. abortu pauciora. *Discus* staminifer annularis, nunc vix conspicuus, nunc inter stamina in glandulas prominentes plus minus expansus. *Ovarium* 1-loculare. ∞-ovulatum; styli 3, rarius 2, v. in floribus nonnullis 4-5. *Capsula* globosa ovoidea v. breviter oblonga, in valvas tot quot styli integras 2-dentatas 2-fidas v. 2-partitas (valvis tunc integris dictis stylis duplo pluribus) breviter v. sæpius infra medium dehiscens. *Semina* reniformi-globosa v. a latere compressa, tuberculata v. lævia.—Herbæ *annuæ vel perennes, nunc graciles v. rigidæ foliis subulatis parvisve, nunc rarius diffusæ v. cæspitosæ foliis latioribus, Stellariis nonnullis similiores.* Flores *terminales cymoso-paniculati v. capitati, rarius axillares subsolitarii.* Petala *alba v. rarissime rubra.*

Arenaria *purpurascens;* cæspitosa, decumbens, ramis erectis 2-3-floris, foliis ovato-lanceolatis acuminatis glabris, pedicellis tomentosis folia vix superantibus, sepalis lanceolatis lævibus margine scariosis corolla longioribus, capsulis ovato-cylindricis semi-sexvalvibus calycem longe superantibus, valvis acutis, seminibus reniformibus.

Arenaria purpurascens; *Ramond in DC. Flore Française*, vol. iv. p. 785; *DC. Prodr.* vol i. p. 410; *DC. Ic. Gall.* tab. 45.

Arenaria cerastoides, *Pers. Ench.* vol. i. p. 502.

Cerastium Ramondi, *Fenzl.*

A native of the lofty mountains of the Pyrenees, where it forms large patches, fed by rills from the melting snows, conspicuous from its multitude of star-like pale pink flowers, with deep red stems, stamens, and pistils—characters which give it a very sparkling appearance on a rockwork. I am indebted to Mr. Backhouse, of York, for the specimen now figured, which flowered in May, 1869.

May 1st, 1870.

Descr. Forms densely tufted convex masses, three to six inches diameter; branches red, ascending, puberulous, one to three flowered towards the tip. *Leaves* one-third to two-thirds inch long, bright green, sessile, ovate or ovate-lanceolate, acuminate; pedicels as short as, or scarcely longer than the leaves, tomentose, pink. *Flowers* one-half to two-thirds inch diameter. *Sepals* lanceolate, one-third shorter than the petals, green, keeled, obscurely nerved. *Petals* elliptic, obtuse, quite entire. *Stamens* ten, bright red. *Ovary* short, ovoid, and three styles also red. *Capsule* two to three times as long as the calyx.—*J. D. H.*

Fig. 1, Flower; 2, the same with the petals removed; 3, disk and ovary; 4, transverse section of ovary; 5, fruit:—*all magnified.*

V Fitch, del et lith

Vincent Brooks Day & Son, Imp

Tab. 5837.

GREVILLEA PREISSII.

Preiss's Grevillea.

Nat. Ord. Proteaceæ.—Tetrandria Monogynia.

Gen. Char.—*Perigonium* tetraphyllum v. quadripartitum, irregulare; laciniis subspathulatis, secundis, revolutis. *Antheræ* 4, laciniarum apicibus concavis immersæ. *Glandula hypogyna* unica, dimidiata. *Ovarium* sessile v. stipitatum, uniloculare, biovulatum; stylus adscendens, stigmate obliquo depresso *v.* subverticali conico. *Folliculus* coriaceus v. ligneus, uniocularis, dispermus. *Semina* marginata v. apice brevissime alata.—Frutices *v.* arbores *per omnem* Novam Hollandiam *observati, pube dum adest medio affixa.* Folia *alterna, indivisa v. pinnatifida bipinnatifidaque, glandulis cutaneis hypogenis v. rarius amphigenis.* Spicæ *nunc elongatæ racemosæ nunc abbreviatæ corymbosæ v. fasciculiformes; pedicellis germinatis, raro pluribus, paribus fasciculisve unibracteatis.* Perigonium *rubicundum v. flavum, in nonnullis oblique insertum.—Endl.*

Grevillea *Preissii;* ramulis tomentosis, foliis glabrescentibus subbipinnatis segmentis breviter filiformibus confertis subtus sulcatis, racemis terminalibus sessilibus multifloris patentibus secundis, perianthio glabriusculo apice revoluto, glandula hypogyna crassa depressa, ovario longe stipitato glabro stylo apice breviter clavato disco stigmatifero laterali, folliculo turgido lævi.—*Benth. MSS.*

Grevillea Preissii, *Meissner in DC. Prodr. v.* 14, *p.* 371.

Amongst the many beautiful hard-wooded plants of Western Australia, none exceeds this for the elegance of its foliage and sparkling colour of its flowers, which are most copiously produced; and it has further the advantage; not common to the other members of the genus, of being capable of successful cultivation in a small pot, which merit, together with its being a very early flowerer, will recommend it to the cultivators of green-house plants.

The seeds from which the plant was raised of which the accompanying drawing was made, were presented to the Royal

Gardens with many others, by Mr. Du Boulay, of Perth, in South-Western Australia, and flowered in March of the present year. The species has been collected by Preiss, Drummond, and others, in the neighbourhood of Perth; by Harvey between Swan river and King George's Sound; and by Preiss in the neighbourhood of King George's Sound. There is also in F. Mueller's herbarium a small specimen gathered by Würth (a gardener) in the Murray desert of South Australia, near Lake Alexandrina.

Descr. A shrub described by collectors as attaining three to five feet, with a spreading habit, the fine foliage of a pale green and slightly silky-tomentose, when young resembling that of southernwood. *Leaves* pinnate, with the lower pinnæ usually again pinnate, the segments linear-terete, almost filiform, acute but neither rigid nor pungent, singly or doubly grooved underneath, the whole leaf from one to two inches long. *Racemes* terminal, sessile, spreading or recurved, one to one and a half inches long, the rhachis tomentose, the flowers numerous, secund, on pedicels of one to two lines. *Perianth* glabrous or sprinkled with a few hairs outside, bearded inside with short hairs above the middle, the tube or claws of the segments pink, about one-quarter inch long, attenuate above the middle and revolute under the globular reflexed greenish limb. *Hypogynous gland* broad, thick, but depressed, semi-circular. *Ovary* glabrous on a long stipes; style long, filiform, thickened at the end with a small lateral stigma in the centre of an orbicular disk. *Follicle* turgid, glabrous and smooth, about one-half inch long.—*Benth.*

Fig. 1, Portion of flowering, and 2, of fruiting raceme; 3, anthers:—*all but 2 magnified.*

W Fitch del et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5838.

CYCLONEMA MYRICOIDES.

Myrica-like Cyclonema.

Nat. Ord. Verbenaceæ.—Didynamia Angiospermia.

Gen. Char.—*Calyx* brevis, campanulatus, 5-fidus. *Corolla* irregularis, tubo reclinato, limbo inæqualiter 5-partito subbilabiatim patente, lacinia postica resupinata cucullato-galeata, reliquis planiusculis. *Stamina* 4, didynama, corollæ tubo inserta, longe exserta, filamentis adscendentibus basi subpaleaceo-hirsutis, æstivatione intra galeam circinato-convolutis; antheræ sagittato-ovatæ, biloculares, loculis introrsis parallelis rima hianti dehiscentibus. *Ovarium* 4-loculare, loculis uniovulatis; stylus filiformis, stamina superans; stigmate bifido. *Drupa* vix carnosa, tetrapyrena vel abortu mono- di- tripyrena, apice lobata, pyrenis distinctis unilocularibus, putamine pergamentaceo lævi. *Semen* crassum, oleosum, radicula infera brevi.—Frutices Africani. Folia *opposita*, *simplicia*. Corymbi *axillares*, *pauciflori*, *trichotomi*.

Cyclonema *myricoides;* ramulis angulatis cum pedunculis petiolis nervoque foliorum medio subtus puberulis, foliis oppositis lanceolato-vel obovato oblongis acuminatis in petiolum brevissimum attenuatis superne grosse serratis rarius integerrimis supra scabris subnitidis subtus opacis, cymis pedunculatis folium subæquantibus exsertisve paucifloris, calycibus longe; pedicellatis, tubo subgloboso, lobis obtusis.

Cyclonema myricoides, *Hochst. in Schimp. Pl. Abyss.*, Nos. 330 and 1839; *Schauer, in DC. Prodr.* vol. ii. p. 675

Spironema myricoides, *Hochst. l. c.* No. 330.

Clerodendron myricoides, *R. Br.? in Salt's Voyage, Append.*, p. 64.

A small stove shrub, which has long been in cultivation in the Palm-house at Kew, flowering annually in spring; but how or from whom procured is not known. The genus to which it belongs, a very near ally, if not indeed identical with *Clerodendron*, is a native of tropical and subtropical Africa; where *C. myricoides* extends from Abyssinia to

Natal; in the former country ascending to 7000 feet elevation. A very similar, or probably identical species, has been collected by Consul Petherick on the banks of the White Nile, in lat. 7° to 8° N., and the *C. serratum*, Hochst. of Abyssinia, is probably another variety of it.

Descr. A shrub, three to five feet high, with scattered angular branches; which, together with the peduncles, petioles, and leaves beneath, are more or less pubescent. *Leaves* one and a half to three inches long, opposite or in whorls of three to four, subsessile or shortly petioled, lanceolate or obovate or oblong-lanceolate, acuminate, more or less deeply obtusely or acutely toothed, rarely quite entire. *Cymes* fascicled in the axils of the leaves, trichotomous, loose; branches slender, spreading, with a small leafy bract in the forks, and one or two minute bracteoles at the base of the short pedicel. *Calyx-tube* globose; lobes broad, unequal, spreading, ovate, obtuse. *Corolla-tube* half an inch, pale pink; limb one and a half by one inch broad; four upper lobes nearly equal, elliptic, obtuse, nearly white; lower obovate-spathulate, much longer, blue; mouth villous. *Stamens* curved; filaments green; anthers small red-brown. *Ovary* puberulous. —*J. D. H.*

Fig. 1, stamen; 2, calyx and ovary; 3, ovary; 4, transverse section of do.:—*all magnified.*

Tab. 5839.

HERNANDIA mœrenhoutiana.

Tahitian Hernandia.

Nat. Ord. Hernandiaceæ.—Monœcia Triandria.

Gen. Char.—*Flores* monoici, intra involucrum tetraphyllum terni, laterales masculi, breviter pedicellati, nudi, intermedius femineus sessilis, calyculatus. Masc. *Perigonium* corollinum, 6-10-partitum; laciniis biseriatis, interioribus majoribus. *Stamina* 3-5, perigonii laciniis exterioribus opposita, filamentis brevibus erectis basi dilatatis glandulis pedicellatis stipatis; antheræ biloculares, loculis connectivum latiusculum marginantibus, longitudinaliter extus valvis dehiscentibus. Fem. *Perigonii* tubus cylindricus v. urceolatus, limbi 8-10-partiti decidui laciniis biseriatis, exterioribus rudioribus. *Stamina* rudimentaria. *Ovarium* uniloculare; stylus terminalis, simplex, apice clavatus, stigmate infundibuliforme v. discoideo; ovulum unicum, ex apice cavitatis pendulum, anatropum. *Drupa* monosperma, octo-costata, testa crustacea, rhaphe annulari; embryo exalbuminosus, orthotropus; cotyledonibus maximis, lobatis, torulosis, radicula brevi supera. Arbores *in* Asia *et* America tropica *indigenæ*, *excelsæ*, *dense ramosæ*, *foliosæ*; *ramis teretiusculis*, *sparsis*. Folia *alterna*, *petiolata*, *subpeltata*, *integerrima*; *stipulis nullis*. Flores *axillares corymbosi*.

Hernandia *Mœrenhoutiana*; foliis coriaceis e basi rotundata ovali-oblongis v. ovato-cordatis obtusis 3-5-nerviis supra glabris subtus secus nervos basin versus villosulis, corymbo simplici cano-tomentoso, floribus masc. 4-5-meris.

Hernandia Mœrenhoutiana, *Guillem. Zephyrit. Taitens. in Ann. sc. nat.* 2nd. ser. v. 7, p. 189; *Meissn. in DC. Prodr.* v. 15, pt. 1, p. 264.

This very singular and little known plant has long been in cultivation in the Palm House of the Royal Gardens, and is a native of the Pacific Islands. It is closely allied to the well-known *Hernandia sonora* of the East and West Indian Islands, the juice of which has the property of destroying the hair without pain, when applied to the head; and the light wood of which is used for floats for fishing nets, and is said to take fire from a flint and steel, like German tinder. The genus is of doubtful affinities; being placed by some

near the order *Laurineæ*, on account of the structure of its anthers, and by others near *Combretaceæ*, probably with better reason, from the structure of the ovary and fruit. The specimen here figured, flowered in the Royal Gardens in October, 1869.

Descr. A small tree; branches stout, glabrous, covered with the scars of fallen leaves and of axillary buds. *Leaves* alternate, coriaceous, long-petioled, three to five inches long, young elliptic, old broadly ovate-cordate, obtuse, quite entire, glabrous above, midrib and nerves beneath pilose; petiole pilose when young, terete, one and a half to three inches long. *Peduncles* stout, axillary, equalling the leaves, nearly glabrous. *Bracts* one-third inch long, elliptic, obtuse, sometimes petiolate, densely pubescent on both surfaces, branches of corymb stout, one to one and a half inch long, few, spreading, densely pubescent. *Involucral leaves* like the bracts, and, together with the flowers, dirty yellow; nearly half an inch long. *Flowers* three in each involucre, two males and one female. Male flower two-thirds inch diameter. *Sepals* four, rarely five, obovate-oblong. *Petals* four to five, unequal, sometimes forming one irregular series with the sepals. *Stamens* four to five, each with one stipitate gland at its base; filaments clavate. Female flower. *Ovary* sub-cylindric. *Sepals* five, elliptic, obtuse, deciduous. *Petals* as many, similar but smaller; glands five, reniform, sessile, surrounding the base of the style; which is short, swollen upwards, pubescent, and suddenly dilated into a reniform discoid stigma.—*J. D. H.*

Fig. 1, Female flower; 2, ditto with calyx and corolla removed; 3, male flower with calyx and corolla removed; 4 and 5, gland and stamen from the same:—*all magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5840.

MORMODES Colossus.

Large-flowered Mormodes.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5802.)

Mormodes *Colossus*; pseudo-bulbo elongato vaginato, pedunculo inclinato robusto pedali, racemo æquilongo laxe 6-10-floro, sepalis petalisque consimilibus lanceolatis acuminatis marginibus recurvis roseis apicibus longe flavis, labello subsigmoideo incurvo breviter unguiculato subrhombeo-ovato longe acuminato flavo basin et apicem versus punctis roseis consperso, marginibus revolutis, columna oblique incurva, anthera ovata cuspidata.

Mormodes Colossus, *Reichb.* f. *in Bot. Zeit.*, 1852, p. 636. *Walp. Ann.* v. vi. p. 581.

M. macranthum, *Lindl. in Paxt. Mag.* v. iii. *sub tab.* 93.

The genus Mormodes presents some of the most abnormal forms of flower that are to be found in the vegetable kingdom, and very little indeed is understood of their nature and functions. Some are, as Darwin has shown, sexual forms of widely different looking Orchids, and others are so variable that it is impossible to characterize them specifically. Under such circumstances nothing remains but to watch their growth, figure all the forms that appear, and wait for evidence as to their true position amongst the genera (*Catasetum*, *Gongora*, *Monacanthus*, and *Cycnoches*) with which they have the greatest affinity.

The subject of the present plate was published almost simultaneously by Reichenbach fil. and Lindley. It is a native of the mountains of Central America, at elevations of about 7000 feet, and was introduced by Warscewicz in about 1850; the specimen here figured flowered in Mr. Veitch's nursery in March of the present year.

June 1st, 1870.

Descr. *Pseudobulbs* six inches to a foot long, sub-terete, tapering upwards, clothed with broad brown appressed distichous sheaths. *Leaves* elliptic-ovate, plaited, bright-green. *Scape* a foot long, very stout, terete, green; sheaths short, triangular, appressed. *Raceme* a foot long, inclined, eight to ten-flowered, stout, flexuous; bracts lanceolate, much shorter than the pedicels. *Flowers* spreading, five to six inches across the tips of the opposite sepals. *Sepals* and *petals* spreading or reflexed, narrow-lanceolate, with recurved margins, gradually narrowed into acuminate tips; lower half pink, with darker parallel veins, thence bright yellow to the tips. *Lip* rather shorter than the sepals, shortly pedicelled, ovate-cordate or sub-rhomboid, with a long acuminate point, incurved, very convex, the margins revolute and meeting at the back, of a uniform bright yellow colour, sprinkled with pink dots towards the base and tip. *Column* green, arching, twisted to one side, so that the back of the anther is applied to the face of the lip.—*J. D. H.*

Fig. 1, Column and lip:—*magnified.*

1.
2.
3.

Tab. 5841.

PLECTRANTHUS coleoides.

Coleus-flowered Plectranthus.

Nat. Ord. Labiatæ.—Didynamia Gymnospermia.

Gen. Char.—*Calyx* per anthesin campanulatus, 5-dentatus, dentibus æqualibus vel supremo majore, fructifer auctus, nunc declinatus, rectus incurvus vel inflatus, dentibus æqualibus vel varie bilabiatis; nunc erectus, tubulosus vel campanulatus, æqualiter 5-dentatus. *Corollæ* tubo exserto, basi supra gibbo vel calcarato, dein declinato defracto vel subrecto, fauce æquali vel rarius inflatâ; labio superiore 3-4-fido; inferiore integro sæpius longiore concavo. *Stamina* 4, declinata, didynama, inferiora longiora; filamentis liberis, edentulis; antheræ ovato-reniformes, loculis confluentibus vel rarius subdistinctis divaricatis. *Stylus* apice breviter bifidus, lobis subæqualibus subulatis, stigmatibus minutis terminalibus.—Herbæ, suffrutices, fruticesve Asiatici Australasici *vel* Africani, *unicâ specie etiam in* Brasiliâ *crescente.* Racemi *terminales, simplices vel ramosi.* Verticillastri *laxi, multiflori, cymis utrinque sæpius evolutis, rarius in verticillastros densos contractis.*—Benth.

Plectranthus *coleoides*; caule erecto subcarnoso puberulo, foliis petiolatis late ovato-cordatis crassiusculis puberulis floralibus deciduis, racemo paniculato, cymis utrinque multifloris, calycis fructiferi dente supremo ovato decurrente superioribus subulato-lanceolatis acutis, corollis calyce quadruplo longioribus tubo ad medium defracto fauce dilatato.

Plectranthus? coleoides, *Benth in DC. Prodr.*, v. xii. p. 64.

The subject of the present plate was raised from seeds sent to the Royal Gardens from the Nilghiri Mountains by Mr. Batcock, of the Government Cinchona plantations, in 1862; it forms a handsome winter and spring flowering pot-plant in the Palm House, conspicuous for its ample foliage, spotted stems, and copious panicles of blue purple flowers.

Descr. *Stem* one to two feet, erect, obscurely 4-angled, green spotted with purple, pubescent above, as are the

petioles, leaves beneath and inflorescence. *Leaves* orbicular-cordate, obtuse, doubly-crenate, rugose above, two to five inches in diameter, lurid green. *Inflorescence* erect, three to ten inches long, subcylindric, peduncles and pedicels purplish. *Flowering calyx* small, pubescent, lobes very unequal, upper broadest and curved, the rest triangular-subulate. *Corolla* one-third of an inch in diameter; tube much compressed, suddenly deflexed; upper lip short, broad, reflexed, 4-lobed, ciliate; lower lip pendulous, boat-shaped, bearded within. *Stamens* included in the lower lip.—*J. D. H.*

Fig. 1, Front and 2, side views of flower; 3, portion of corolla and stamens; 4, disk and ovary :—*all magnified.*

W. F. del. et lith.

Vincent Brooks Day & Son Imp.

Tab. 5842.

HECHTIA? Ghiesbreghtii.

Ghiesbreght's Hechtia.

Nat. Ord. Bromeliaceæ.—Hexandria Trigynia.

Gen. Char.—*Flores* diœci. Masc. . . . Fem. *Perigonii* ima basi ovario inferne adnati sexpartiti laciniæ exteriores calycinæ basi connatæ, æquales, ovatæ, concavæ, erectæ; interiores corollinæ, liberæ, exterioribus duplo longiores, ovato-lanceolatæ, concavæ, erectæ, basi nudæ. *Staminum* rudimenta 6, subulata, libera. *Ovarium* ima basi adnatum, pyramidali-trigonum. *Stylus* brevissimus; stigmata 3, subulata, superne papillosa, patentia, demum erecto-subcontorta. Fructus?—Herba mexicana, *perennis*; caudice *subnudo*; foliis *congestis*, *subulato-linearibus*, *longissimis*, *crassis*, *serrato-spinosis*, *pungentibus*, *patenti recurvis*; *scapo sexpedali*, *floribus parvis*, *in spicam compositam dispositis*, *sessilibus*, *patentibus*, *bracteis membranaceis*, *aridis*, *minutis suffultis*.—Endl.

Hechtia? *Ghiesbreghtii*, foliis confertissimis rosulatis patenti-recurvis crasse coriaceis e basi lata sensim in apicem pungentem angustatis supra concavis enerviis viridibus ultra medium rubro-purpureis, marginibus breviter subremote spinoso-dentatis, subtus argenteis convexis lineatis, scapis axillaribus gracillimis elongatis furfuraceis multi-bracteatis, floribus albis in fasciculos parvos remotos congestis, bracteolis minutis cucullatis.

Hechtia? Ghiesbreghtii, *Lemaire*, *l'Illustration Horticole*, v. x. p. 378.

The genus *Hechtia* was originally founded by Klotzsch of Berlin in 1835, upon a female specimen of a very imperfectly known Mexican plant, respecting which nothing has subsequently been published, and which would appear to differ from the plant here figured, in the wholly superior ovary and apparently unisexual flowers. To this genus the *H. Ghiesbreghtii* was doubtfully added by Lemaire in the year 1862, and described as having six subdidynamous stamens

and abortive three- or more-celled ovaries, characters which are not obvious in the Kew specimens. Under these circumstances I can only assume, that if *H. Ghiesbreghtii* be rightly referred to *Hechtia*, the latter is a polygamous genus liable to great variations in its ovary, and possibly identical with *Dyckia*. Indeed, the similarity of this plant to *Dyckia* is very striking, both in habit and floral characters; but the latter genus has a wholly superior ovary, and many ovules in each cell. The order to which it belongs is, I think, clearly *Bromeliaceæ*.

H. Ghiesbreghtii is a native of Mexico, introduced by M. Verschaffelt of Ghent, in 1862, by the collector whose name it bears, and is a very attractive greenhouse plant, on account of its remarkably beautiful purple and green foliage, which is silvery below. The flowers, which appeared at Kew in July, smell of hawthorn, and are very insignificant indeed.

Descr. *Stem* 0. *Leaves* ten to eighteen inches long, most densely crowded into a rosulate mass, strongly recurved and clasping the flower-pot all round, rigidly coriaceous, three-quarters to one and a quarter inch broad at the base, gradually narrowed from thence to the rigid pungent tip; margins beset with rather distant rigid spinous teeth; upper surface bright green from the base to the middle, blood-red or purple from thence to the tip, under surface silvery grey. *Scapes* several, axillary, suberect, flexuous, very slender, scurfy, eighteen to twenty-four inches long; bracts sheathing, acuminate. *Flowers* white, one-third of an inch in diameter, sessile in rather distant capitate fascicles along the upper part of the scape; bracteoles minute, concave, scarious, yellow-brown. *Sepals* linear-oblong, obtuse, scurfy, erect, half as long as the corolla, inserted towards the base of the ovary. *Corolla* inserted towards the summit of the ovary, 3-lobed nearly to the base; lobes rounded, spreading. *Stamens* six, sub-equal, inserted towards the base of the corolla, filaments broadly subulate; anthers oblong, apiculate. *Ovary* 3-celled, summit broadly conical; styles three, short subulate; ovules apparently one in each cell.—*J. D. H.*

Fig. 1, reduced view of the plant; 2, leaf; and 3, portion of scape, both of the *natural size*; 4, flowers and bracteole; 5, vertical section of ditto; 6, stamen:—*all magnified.*

W. Fitch, del. et lith

Vincent Brooks, Day & Son, Imp

Tab. 5843.

MILTONIA Warscewiczii.

M. Warscewicz's Miltonia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5572.)

Miltonia *Warscewiczii*; pseudobulbis 3-5-pollicaribus viridibus, foliis 5-6-pollicaribus, panicula inclinata longe pedunculata multiflora, bracteis brevibus scariosis acuminatis, floribus $1\frac{1}{2}$ poll. latis, sepalis petalisque obovato-spathulatis undulato-crispatis, labello late subcuneato oblongo v. quadrato 2-lobo planiusculo basi obscure cristato et bidentato, columna brevissima purpurea.

Miltonia Warscewiczii, *Reichb. fil. Xen. Orchid.* v. i. p. 132. — *Gard. Chron.*, 1869, pp. 277 and 1067.

This appears to be one of the most copious flowering species of Miltonia in cultivation; it was discovered by Pœppig, in Peru, and has been collected by Warscewicz and others. It was flowered first by Mr. Linden of Brussels, whose specimens were described by Reichenbach, under the above name of *Warscewiczii*; these, however, only bore six to eight flowers, but more recently as many as twenty to thirty have been produced, and as we find the same number in dried specimens, this must be regarded as the normal number. In this country it has flowered repeatedly within the last two years; the flowers being, as I am informed, exceedingly variable in colour and markings. For the specimen here figured I am indebted to Mr. Bull, F.L.S., of Chelsea, from whose plant the drawing was made by Mr. Fitch, in March of the present year.

Descr. *Pseudobulbs* three to five inches long, one inch broad, green, much flattened. *Leaves*, linear-oblong, obtuse, bright pale-green, five to six inches long. *Scape* slender, in-

clined. *Flowers* very numerous, crowded on a branched nodding panicle, two inches long from the tip of the lip to that of the upper sepal; bracts scarious, acuminate, much shorter than the ovary. *Sepals* and *petals* nearly equal and similar, obovate-spathulate, much waved and crisped, pale reddish-brown, fading into yellow at the tips. *Lip* oblong-quadrate or subcuneate, 2-lobed at the apex, margins recurved, obscure 3- to 5-keeled and 2-toothed at the very base; margins broadly white; disk rose-purple, with a broad, pale, yellow-brown blotch below the middle, and a suborbicular white one at the base. *Column* very short, purple.—*J. D. H.*

Fig. 1, Column and base of lip; and 2, pollen-masses:—*both magnified.*

W Fitch, del. et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5844.

OPHRYS Speculum.

Looking-glass Ophrys.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5712.)

Ophrys *Speculum ;* sepalis oblongis obtusis viridibus purpureo fasciatis, petalis minutis triangulari-lanceolatis purpureis recurvis, labello oblongo-quadrato valde convexo margine dense barbato medio v. altius 3-fido, segmentis lateralibus parvis, intermedio lato retuso, disco plaga glabra cærulea micante aureo-limbata notata, margine late rubro-castaneo, columna obtusa.

Ophrys Speculum, *Link.* in *Schrad. Diar. Bot.* 1799, v. ii. p. 324. *Reichb. Fl. Germ. Orchid.* p. 80, t. 448.

O. insectifera, var. *Linn. Sp. Pl.* n. 949.

O. vernixia, *Brotero, Fl. Lus.* p. 24.

O. ciliata, *Bivoni.* Cent. 1, p. 60.

Amongst the most attractive horticultural novelties of the Spring Exhibitions, during the last two years, have been the groups of terrestrial Orchids, for the most part collected in various parts of Europe, by His Royal Highness the Comte de Paris, and cultivated by him at Twickenham, and which are no less remarkable for their botanical interest than for their beauty and the perfect condition of health to which they have been brought by very simple means and appliances. Many belong to the genus *Ophrys*, and of these the subject of the present plate is one of the rarest and at the same time most curious ;—the brilliant polished surface of the disk of the lip, which shines like a blue-steel looking-glass, edged with gold, and that again set in a rich maroon velvety frame, presenting a combination of colours quite unlike anything else known to me in the vegetable kingdom. The species is

a native of grassy hills in Europe, south of the Alps, from Portugal and Spain to Greece, Turkey and Asia Minor, and it crosses the Mediterranean to the Algerian coast; like its congeners it varies much in the size of the flower, the form of the lip, and relative dimensions of the purple, gold, and blue markings; the latter being sometimes reduced to one or two spots. The specimens here figured flowered in a cool frame in the month of April, and were kindly communicated by His Royal Highness for publication in the *Botanical Magazine*. For living specimens, the Royal Gardens are indebted to J. T. Moggridge, Esq., F.L.S., who collected them in the neighbourhood of Mentone, and which flowered a few weeks after those here figured.

Descr. *Tubers* globose. *Leaves* linear-oblong, acute, spreading. *Stem* four to twelve inches high, sheathed, 3- to 6-flowered. *Bracts* one to one and half inch long, linear-oblong, erect, margins involute. *Flowers* one half to one inch from the base of the lip to the tip of the upper sepal. *Sepals* subequal, incurved, linear-oblong, green, with broad purple bands, but very variable in this respect; lateral spreading; dorsal arched. *Petals* very small, triangular-lanceolate, recurved, dark purple or maroon-brown, very variable in size. *Lip* quadrate-oblong in general outline, very convex, margins recurved; lateral lobes rounded, rarely extending beyond the middle; mid-lobe large, broad, rounded, obscurely notched; disk steel-blue, very shining, with a golden edge; margins broadly maroon-purple, velvety and fimbriate. *Column* short anther arched, subclavate, obtuse.—*J. D. H.*

Fig. 1, Front, and 2, back view of flower :—*both magnified.*

W Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5845.

VANDA Cathcarti.

Mr. Cathcart's Vanda.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5174.)

Vanda *Cathcarti*; foliis lineari-oblongis planiusculis apice oblique 2-lobis, lobis rotundatis, racemo subrecto laxo pauciflоro foliis paulo longiore, floribus amplis, sepalis petalisque oblongo-rotundatis subæqualibus sessilibus pallide flavidis brunneo creberrime transverse fasciolatis, labello breviter unguiculato ambitu subrotundato lobis lateralibus albis auriculæ formibus, lobo intermedio flavo reniformi marginibus incurvis crenulatis, disco crasso 2-costato basi callis 2-ornato.

Vanda Cathcarti, *Lindl. Fol. Orchid. Vanda.* p. 8. *Hook. f. Ill. Himal. Pl.* t. 23.

By far the noblest species of the noble genus to which it belongs, and of which Dr. Lindley said when originally describing it,—"No more remarkable orchid has been found in Northern India." The flowers much exceed in size those of its congeners, and though less brilliant than many of these, are singularly rich in hue, owing to the colour number and disposition of the bright red brown transverse bars, the effect of which is not matched by any other known orchid. It is a rare native of hot damp shady valleys in the Eastern Himalaya, delighting in the neighbourhood of waterfalls where exposed to constant humidity; and has hitherto proved to be a very difficult plant to cultivate and propagate. It was discovered by myself in 1848, and transmitted to the Calcutta Botanic Gardens, where after flowering it was sent off to England, but did not survive the voyage. Repeated attempts have subsequently been made to introduce it with more or less success, and the honour of first flowering it in this country is I believe due to the Messrs. Veitch, whose

plant produced one flower in March of the present year. The plate here published is made up from this flower and the figure given in my illustrations of Himalayan plants, which is a faithful copy from a beautiful drawing (itself executed with the scrupulous fidelity of a Hindoo draughtsman), made in the Himalaya itself during my stay there, by a native artist employed at Darjeeling by my late friend Judge Cathcart. Comparing the colouring of the English-grown with the Himalayan flower, it will be seen that that of the native-grown plant is very much the finest, the bands being darker, more fulvous, and running more into one another, the lip and petals are however broader in Messrs. Veitch's flower, and rather larger.

Descr. *Stems* one to two feet, terete, almost as thick as the little finger. *Leaves* distichous, falcate and recurved, linear-oblong, six to eight inches long, one and a quarter to one and a half inches broad, rather pale green, keeled, very unequally 2-lobed at the tip; lobes rounded. *Racemes* lateral, rather longer than the leaves, stout, 3–6-flowered, shortly peduncled. *Bracts* short, broad, sheathing. *Ovary* and *pedicel* together one inch long. *Flowers* two and a half inches diameter, nearly orbicular in outline. *Sepals* and *petals* subequal and similar, broadly orbicular-oblong, concave, rounded at the tip, very coriaceous, pale straw-coloured, transversely streaked with innumerable wavy often confluent red-brown bands. *Lip* smaller than the petals, very shortly clawed, 3-lobed; lateral lobes small, white with red streaks at the base, subquadrate, incurved; mid-lobe reniform, margin white, obscurely crenate or crisped, centre exceedingly thick with a crenate border, yellow; disk of lip with two erect truncate calli near the base. *Column* very stout, white, scarlet at the tip below the yellow anther.—*J. D. H.*

Fig. 1, lip; 2, column; 3, pollinia,—*all magnified;* 4, fruit (copied from the Illustrations of Himalayan Plants)—*of the nat. size.*

W Fitch, del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5846.

DRACÆNA cylindrica.

Cylindric-spiked Dracæna.

Nat. Ord. Asparagineæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5248.)

Dracæna *cylindrica;* caule erecto indiviso folioso, foliis sursum gradatim majoribus patenti-recurvis e petiolo lato obovato-lanceolatis abrupte acuminatis, nervis obscuris, spica sessili terminali amentiformi densa cylindrica obtusa, bracteis ovato-lanceolatis acuminatis tubum angustum perianthii æquantibus, pedicello brevi apice tumido, perianthii laciriis anguste linearibus albis recurvis filamenta medio paulo incrassata æquantibus, antheris parvis flavis, stylo gracillimo, stigmate obscure 3-lobo.

Very closely allied to *Dracæna bicolor* (Tab. nost. 5248) but a far handsomer plant, three to five feet high, with a strict erect trunk, bearing a profusion of spreading and recurved leaves, which becoming gradually larger upwards give it a very noble appearance; the leaves are further much larger and more obovate than in *D. bicolor*, with broader petioles, and the dense terminal spike is much larger, sessile, quite amentiform. The pedicel of the flower and its tube are more slender, as are the perianth-segments; the bracts, stamens, and ovary are similar in both.

D. cylindrica is a native of the Old Calabar River, on the West Coast of Tropical Africa, where it was discovered by Mr. Gustav Mann, when collector for the Royal Gardens, the most successful botanical explorer who ever visited the malarious West Coast of Africa, and who is now an assistant conservator of Forests in Bhotan, under the Indian Government. It was subsequently found by that zealous and enlightened missionary, the Rev. W. C. Thomson, in the same district, by whom it was introduced into the Royal

Botanical Garden of Edinburgh, to which Kew is indebted for the magnificent specimen here figured.

Descr. *Stem* erect, three to five feet high, slender, one inch diameter at the naked base, leafy upwards, simple. *Leaves* clothing the stem, gradually larger upwards, imbricated all round, sheaths concealing the stem, uppermost seven to ten inches long, all linear- or obovate-lanceolate, spreading and reflexed, narrowed into broad petioles which are three to four inches long, pale bright green, rather paler below, a little waved, acuminate, points with an almost filiform mucro; nerves obsolete when fresh, faint and parallel when dry. *Spike* terminal, solitary, sessile, erect, cylindric, three to seven inches long, obtuse, most dense-flowered; bracts red or purple-brown; flowers white. *Bracts* ovate-lanceolate, acute, as long as the perianth-tube, bracteoles subulate-lanceolate. *Perianth* on a short slender pedicel; tube slender, cylindric, one inch long, obscurely dilated at the base; segments one-third shorter than the tube, narrow-linear, obtuse, concave. *Stamens* equalling the perianth-segment, filaments straight, slightly thickened in the middle; anthers small, oblong, yellow. *Ovary* small, narrow-ovoid; style very slender, stigma capitate, three-lobed.—*J. D. H.*

Fig. 1, reduced figure of entire plant; 2, flower and bracts; 3, leaf; *both of natural size:* 4, flowers and bracteoles; 5, stamens; 6, ovary:—*all magnified.*

W Fitch, del et lith

Vincent Brooks Day & Son Imp

Tab. 5847.

IRIS iberica.

Iberian Iris.

Nat. Ord. Irideæ.—Triandria Trigynia.

Gen. Char. (*Vide supra*, Tab. 5298.)

Iris (Oncocyclus) *iberica ;* caule brevi 1-floro, foliis conduplicatis lineari-ensiformibus recurvis, spathæ diphyllæ foliolis subherbaceis acuminatis perianthii tubum subæquantibus, perianthii laciniis subæqualibus amplis subrotundatis obtusis, interioribus abrupte deflexis coriaceis coloratis marginibus recurvis, exterioribus erectis albis margine subundulatis, stigmatibus deflexis obovato-oblongis 2-fidis lobis brevibus recurvis dentatis.

Iris iberica, *Hoffm. in Comm. Soc. Phys. Mosc.* i. p. 41. *Ledeb. Fl. Ross.* v. 4. p. 105. *M. Bieb. Fl. Taur. Cauc.* v. i. p. 30. *Regel Gartenfl.* v. 12, p. 3, t. 386, f. i. 2.

Oncocyclus ibericus, *Siemssen ; Klatt. in Linnæa* v. 34, p. 580.

A more singular looking plant than the subject of this plate seldom falls under observation in a living state, its dwarf habit, gigantic flower, great snow-white erect outer perianth leaves, the equally large strangely coloured inner perianth, and the deflexed stigmas with shining black purple humped bases, the two latter organs resembling some great insect, make up a flower of singular oddity and beauty too. We have referred it to the *Iris iberica* of Hoffman, with dried specimens of which it entirely agrees. It differs, however, from the plant figured by Dr. Regel in the Gartenflora under this name, in the obtuseness and colour of the inner perianth-segments, which are represented as ochreous-brown, and as wanting the polished almost black disk and marbled edges of our plant; the colour of these organs is however described as being excessively variable, and as ochreous-yellow in his var. *ochreacea*. Klatt refers the *I. taurica* of

Loddige's Botanical Cabinet to this species, but I know not on what authority beyond Loddige's figure, which is extremely unlike this plant. *Iris iberica* is a native of the Iberian provinces of the Caucasus, and of Imeretia (not of the Iberian Peninsula) and extends into Cilicia, Kurdistan, and probably Persia, inhabiting mountains of 6500 feet high. The magnificent specimen here figured was sent for publication by Mr. Ware, of the Hale Farm Nurseries, Tottenham, with whom it flowered in May of the present year.

Descr. *Rootstock* tufted. *Stem* three to six inches high, leafy. *Leaves* glaucous, shorter than the stem, much recurved, falcate or revolute, linear-ensiform, two to four inches long, one quarter to three quarters in diameter, margins flat or wrinkled, membranous, as are the sheaths. *Spathes* two, ovate-lanceolate, rather longer or shorter than the perianth-tube, membranous except at the base. *Flower* solitary, very large, three to five inches from the tip of the reflexed to that of the erect perianth-segments, and two to three across the former. *Outer* perianth-segments erect, orbicular, subcordate at the base, white, undulate, with a few red spots towards the base on the inner surface; inner segments deflexed, broadly oblong, rounded at the tip, concave with entire recurved margins, yellow-green, covered with wrinkled dark-purple reticulate narrow bands: disk depressed, black-purple, shining. *Stigmas* reflexed on the disk of the inner perianth-segments, obovate-oblong, keeled, with broad 2-fid recurved toothed tips, dull yellow mottled with red-brown; convex base black-purple and shining—*J. D. H.*

Tab. 5848.

ANTHURIUM ornatum.

White-spathed Anthurium.

Nat. Ord. Orontiaceæ.—Tetrandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5319.)

Anthurium *ornatum*; caudice brevissimo, petiolis gracilibus teretibus basi incrassatis breviter vaginantibus, geniculo elongato subcylindrico, lamina ovato- v. oblongo-cordata abrupte acuminata concava utrinque viridia sinu profundo, costis 7-14 intimis erectis lateralibus arcuatis, auriculis ovatis v. rotundatis, pedunculo gracili cylindrico viridi, spatha 5- 7-pollicari nivea e basi ovato-cordata oblonga abrupte acuminata, spadice purpureo breviter stipitato spatha subæquilongo, perianthii segmentis subquadratis apice truncatis, ovario ovoideo medio subconstricto, stigmate parvo disciformi.

Anthurium ornatum, *Schott in Oesterr. B. Wochenbl.* 1857, p. 294, *ex Prodr. Syst. Aroid*, p. 499.

This tropical aroid, conspicuous for its ample foliage, snow-white spathes, and fine purple spadices, has been long cultivated in the Royal Gardens, and appears to be the same with the *Anthurium ornatum* of Schott, discovered in Venezuela by Linden in 1842, and again gathered by Fendler in 1854-5. The leaf varies much in size, often attaining one to one and a half feet in length, and in the form, depth, and amount of divergence of the basal lobes. The specimen here figured was from the rich collection of Mr. William Saunders, F.R.S., and flowered in April of the preceding year.

Descr. *Stem* 0, or very short indeed. *Petioles* one and a half to two and a half feet long, slender, rigid, cylindric, green; swollen at the base into an ovoid, very coriaceous sheath, with a narrow slit in front, and at the lip into a cylindric green node one to two inches long. *Blade* one to one and a half feet long, ovate-cordate, acuminate, bright-green on

both surfaces, coriaceous, opaque, basal lobes parallel with a narrow or diverging with an open sinus; principal nerves seven to nine, radiating from the top of the petiole. *Scape* about equalling the petiole, terete, green, slender. *Spathe* five to six inches long, one to one and a half broad, linear-oblong from a cordate amplexicaul base, spreading, convex, with slightly recurved margin, suddenly acuminate, rather thickly coriaceous; nerves obscure. *Spadix* about equalling the spathe, on a short green stipe, slender, cylindric, dark-purple, dotted with the white stigmas. *Perianth-segments* quadrate, with truncate thickened quadrate tops, almost forming trapezoids. *Stamens* concealed, filament very short and broad; anther-cells broad. *Ovary* oblong-ovoid, constricted at the middle, upper part solid, lower two-celled, cells two-ovuled; stigma discoid, white, sessile.—*J. D. H.*

Fig. 1, flower viewed from above; 2, the same viewed laterally; 3, stamen and ovary; 4, longitudinal; and 5, transverse section of ovary:—*all magnified.*

3.

2.

1.

W. Fitch, del et lith

Vincent Brooks, Day & Son, Imp.

Tab. 5849.

SAXIFRAGA aretioides.

Aretia-like Saxifrage.

Nat. Ord. Saxifrageæ.—Decandria Digynia.

Gen. Char. (*Vide supra*, Tab. 5377.)

Saxifraga (Aizonia) *aretioides*; dense cæspitosa, caulibus pedunculis calycibusque glanduloso-viscidulis, foliis alternis sessilibus coriaceis glaucis, rosularum lineari-spathulatis subtriquetris, caulinis linearibus obtusis integerrimis glanduloso-ciliatis, floribus corymbosis densis, calycis laciniis ovatis obtusis petalis obovatis luteis brevioribus.

Saxifraga aretioides, *Lapeyrouse Fl. Pyr.* t. 13. *DC. & Duby, Bot. Gall.* v. 1, p. 208. *DC. Prodr.* v. 4, p. 21. *Flore Franc.* v. 4, p. 362.

A pretty perennial-leafed hardy Saxifrage, a native of crevices of rocks in the Pyrenees, and apparently confined to that mountain range, but closely allied to *S. diapensoides*, *S. cæsia*, and others of the same group, which extends from the Spanish Alps to the mountains of Turkey and N. India. The habit is very much that of various species of tufted Alpine *Androsace* (*Aretia* L.), but the persistent foliage and the facility with which it may be propagated renders it a far more eligible rockwork plant than these. The specimen here figured flowered in the Royal Gardens in April of the present year, and has been long in cultivation there, the record of their introducer being lost.

Descr. *Root* long, slender, burrowing in the crevices of rocks, branching and bearing a profusion of short tufted leafy branchlets half an inch to one inch long. *Leaves* densely imbricate and revolute at the top of the branches, one sixth of an inch to one quarter of an inch long, thickly coriaceous or cartilaginous, glaucous, linear-oblong from an ovate base, obtuse, glandular-ciliate, furnished on the upper

surface with several submarginal pores. *Flowering-stems* very numerous, one quarter to half an inch long, erect, stout, leafy, 1-flowered, covered with linear-oblong erect leaves, and as well as the flowering stem and calyx viscidly glandular. *Flower* erect, half an inch diameter. *Calyx-tube* hemispherical, adnate to the base of the ovary; segments short, ovate, obtuse. *Petals* obovate-spathulate, yellow, spreading, emarginate. *Stamens* yellow. *Ovary* short; styles stout, conical, stigmas capitate subentire.—*J. D. H.*

Fig. 1, leaf; 2, flower; 3, ovary and base of calyx :—*all magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5850.

TILLANDSIA Lindeniana.

M. Linden's Tillandsia.

Nat. Ord. Bromeliaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5229.)

Tillandsia (Wallisia) *Lindeniana*; foliis radicalibus confertis patenti-recurvis e basi lata ensiformi-subulatis supra glaberrimis subtus punctato-lepidotis integerrimis, caulinis brevibus erectis imbricatis spathaceis ovato-lanceolatis acutis, spica lanceolata disticha multiflora bracteis ovato-cymbiformibus subacutis, floribus magnis, sepalis elliptico-lanceolatis, petalorum limbo suborbiculari azureo basi ungueque albido, staminibus inclusis, stigmatis lobis erectis cohærentibus, ovulis in placentis multiseriatis.

Tillandsia (Wallisia) Lindeniana, *Regel*, *Gartenflora*, 1869, p. 193, t. 619; *Gard. Chron.* 1870, p. 859, *cum ic. xylog.*

Tillandsia Lindeni; *Morren*, *Belgique Hortic.*

This very handsome Brazilian Tillandsia appears to have been introduced by M. Linden from Brazil into Europe, through Mr. Wallis, and published almost simultaneously by Dr. Regel, of St. Petersburgh, under the name of *Tillandsia Lindeniana*, and by Professor Morren, of Liege, under that of *Tillandsia Lindeni*. It is the largest flowered species of the genus known to me, and very remarkable for the curiously soft texture and hue of the deep violet-blue petals; the colour of which melts into a pure white at the base of the blade.

The specimen here figured was communicated by Mr. Ware, of the Hall Farm Nurseries, Tottenham, with whom it flowered in May of the present year; and it is stated in the *Gardener's Chronicle* to have been shown by Mr. Williams

at a meeting of the Floral Committee of the Royal Horticultural Society.

Descr. *Leaves* crowded at the base of the stem, spreading on all sides, and recurved, one to one and a half feet long, one to one and a half inches broad at the sheathing base, thence tapering to the subulate point; channelled on the pale opaque green face; convex on the minutely lepidote back; dull red-purple towards the base, and obscurely so along the veins; margins quite entire. *Scape* erect, one to one and a half feet high, rarely short, clothed with subdistichous, sheathing, green, erect, convolute, ovate, acuminate bracts one and a half to two inches long. *Spike* four to six inches long by one inch and a half broad, elliptic-lanceolate. *Bracts* distichous, closely imbricate, about ten pairs, boat-shaped, green, with flattened pink sides, subacute. *Flowers* two to five opening at once, two inches in diameter. *Sepals* linear-lanceolate. *Petals* violet-blue, with white claws and base of the limb, which is obovate-orbicular, apiculate; margins recurved; claws white, slender, free. *Stamens* included, in pairs opposite the claws of the petals; filaments linear, flattened; anthers small, linear-hastate, as narrow as the filaments. *Ovary* much shorter than the stamens, narrow ovoid; style as long; stigmas three, linear, erect, coherent; ovules numerous, in many series in each cell.—*J. D. H.*

Fig. 1, Claw of petal and stamens; 2, ovary; 3, transverse section of ditto:—*all magnified.*

W. Fitch del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5851.

CYMBIDIUM CANALICULATUM.

Channelled-leaved Cymbidium.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5457.)

Cymbidium *canaliculatum;* caulibus brevibus compressis, foliis linearibus elongatis acutis carinatis, scapis axillaribus basi paucibracteatis, racemis multifloris, perianthii parvi patentis foliolis subæqualibus elliptico-oblongis obtusis v. subacutis crasse coriaceis intus brunneis viridimarginatis, labello sepalis breviore 3-lobo, lobis lateralibus parvis, intermedio ovato albo roseo-maculato basi obscure 2-carinato.

Cymbidium canaliculatum, *Br. Prod.* p. 331. *Lindl. Gen. and Sp. Orchid.* p. 164. *Mueller, Fragment.* v. 5, p. 95.

A native of Cape York, in North Eastern tropical Australia, where it was collected by Robert Brown in the beginning of the century, and again by Mr. John Veitch, F.L.S., who sent it to England during his collecting voyage to Australia and the Western Pacific, which resulted in the making known of so many interesting plants and beautiful horticultural novelties. Mr. Veitch's specimen appears to differ a little from the description of Brown's plant in the more obtuse perianth-leaves, and in the lip being 3-lobed at the middle rather than the apex. After carefully comparing the flower, however, with excellent specimens of those of *C. canaliculatum*, sent by Dr. Mueller from Arnheim's Land, by Oldfield from Hunter's River, New South Wales, and from subtropical Australia, collected by Bidwill, I find it impossible to establish any satisfactory character whereby to distinguish them. A more obvious point of difference is the much larger bracts of the Arnheim's and Hunter's River plants; but these are as small in Bidwill's specimen as in Mr. Veitch's.

August 1st, 1870.

This plant would thus seem to be variable, and to have a very wide range in distribution, from the temperate climate of Hunter's River, in lat. 33° S., to the torrid and arid shores of Arnheim's Land, in 13° N., and Cooper's Creek in Central Australia, in which latter localities Mueller states that it is the only known orchid.

The specimen here figured flowered in Messrs. Veitch's nursery in April, 1870.

Descr. *Stems* almost pseudo-bulbous, one to three inches long, clothed with leaf-sheaths. *Leaves* four to twelve inches long, half to one inch broad, exactly linear, acute, keeled, ribbed when dry. *Scape* and raceme as long as the leaf, pendulous, laxly many-flowered; bracts minute or rather large, one tenth to one third of an inch long, scarious when dry, when fresh appressed to the pedicel; pedicels very slender, together with the short ovary one inch long. *Flowers* coriaceous, two-thirds of an inch diameter; perianth-segments thickly coriaceous, spreading, inner rather smaller, elliptic-oblong, subacute, concave, brown with green margins, back greenish-brown, inner deeper coloured. *Lip* shorter than the petals, recurved, white with pinkish blotches, 3-lobed at the middle, lateral lobes narrow and small; mid-lobe ovate subacute; base between the lateral lobes with two low ridges. *Column* shorter than the lip, white blotched with purple.—*J. D. H.*

Fig. 1, column; 2, lip :—*both magnified.*

Vincent Brooks Day & Son, Imp

Tab. 5852.

MALOPE malacoides.

Barbary Bastard Mallow.

Nat. Ord. Malvaceæ.—Monadelphia Polyandria.

Gen. Char.—*Bracteolæ* 3, distinctæ. *Calyx* 5-fidus. *Columna staminea* usque ad apicem in filamenta ∞ divisa. *Ovarii* loculi ∞, 1-ovulati; styli rami totidem, filiformes, intus longitudinaliter stigmatosi. *Carpella* matura distincta, supra receptaculum globosum irregulariter capitato-congesta, indehiscentia, a receptaculo secedentia. *Semen* adscendens.—Herbæ *regionis mediterraneæ incolæ, annuæ v. biennes, glabræ v. pilosæ.* Folia *integra v. 3-fida.* Flores *pedunculati, sæpius speciosi, violacei v. rosei.* Bracteolæ *ample cordatæ.*

Malope *malacoides;* pilosa, caule prostrato, ramus adscendentibus, foliis petiolatis elliptico-oblongis ovatisve subacutis v. obtusis basi cuneatis v. subcordatis crenulatis sinuatis v. subpinnatifidis glabris, petiolo pilosulo, stipulis lineari-oblongis, pedunculis axillaribus 1-floris, floribus amplis.

Malope malacoides, *Willd. Sp. Pl.* v. iii. p. 799.—*Ait. Hort. Kew. ed.* II. v. iv. p. 121.—*Cavanill. Diss.* ii. p. 84, t. 27, f. 1.—*Reich. Fl. Germ.* v. v. t. 165.—*DC. Prod.* v. i. p. 429.

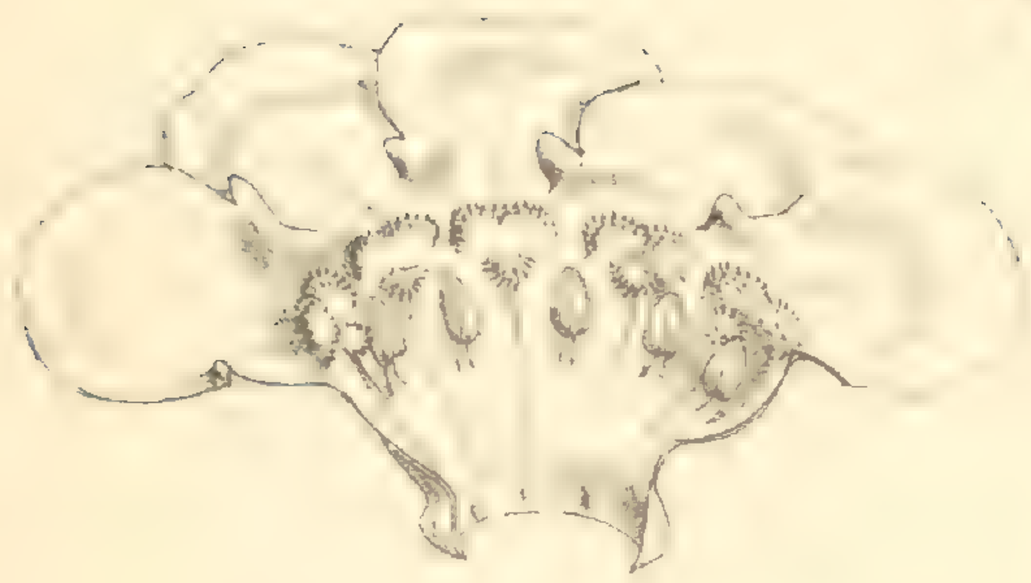
It is remarkable that so very elegant a plant as this, and one introduced into England as long ago as 1710, should never yet have been figured in any English work, and indeed almost fallen out of cultivation. It is a native of the South of France, Spain, Italy, Greece, and Asia Minor, and of Morocco in North-west Africa. From the latter country we received seeds from our active and liberal correspondent, Mr. Maw, who collected them in a botanical excursion to Spain and Tetuan in 1869, which resulted in the introduction into Europe of many charming hardy plants, including *Linaria tristis* (Tab. 5827), and *Cotyledon Salzmanni* (Tab. 5801). The

species is biennial, and best kept in a frame during winter and planted out in summer.

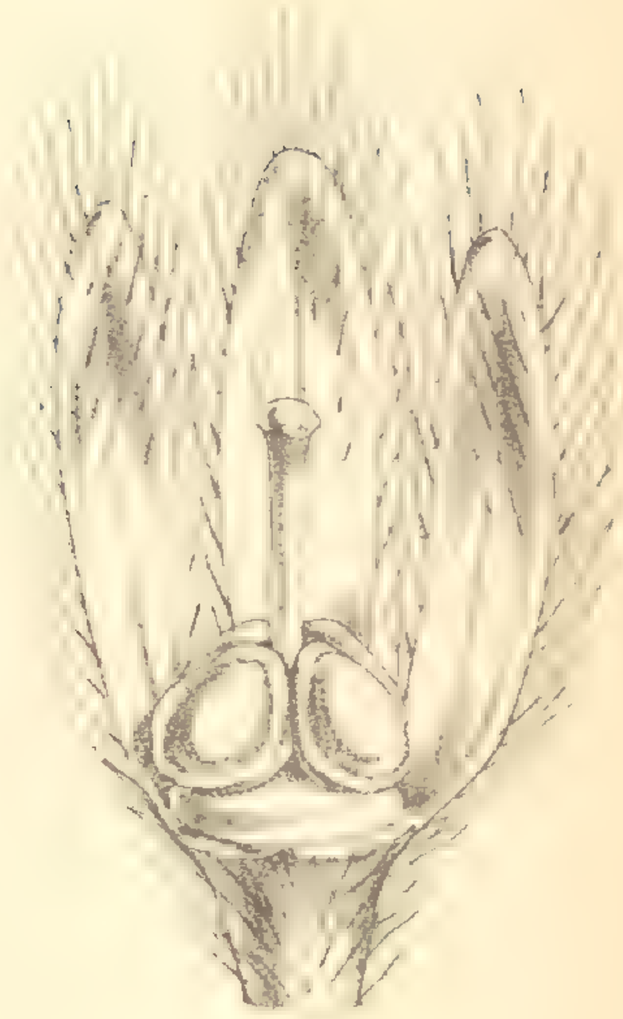
DESCR. *Root* small, woody, biennial. *Stems* one to two feet long, prostrate and ascending, slender, straggling, terete, clothed sparsely with spreading hairs. *Leaves* alternate, petiole very slender, one to two inches long, and as well as the nerves beneath hairy like the stem; stipules green, small, linear- or oblong-lanceolate; blade very variable, one to two and a half inches long, half to one inch broad, oblong or elliptic, or broadly ovate, obtuse, rounded or subacute at the tip, cuneate, rounded or cordate at the base, serrate, crenate or sinuate-subpinnatifid on the margin. *Flowers* two to two and a half inches diameter, axillary, solitary, pedicels longer than the leaves, and calyx hairy or hispid. *Bracts* cordate. *Calyx-lobes* elliptic-lanceolate, acuminate, ciliate. *Petals* obovate, rose-pink, notched at the truncate or retuse apex. *Anthers* very numerous, small, yellow. *Ovary-lobes* numerous, minute; stigmas capillary, purple.—*J. D. H.*

Fig. 1. Ovary with style and stigmas.

2.



3.



4.

Tab. 5853.

ERITRICHIUM NANUM.

Dwarf Alpine Eritrichium.

Nat. Ord. Borragineæ.—Pentandria Monogynia.

Gen. Char.—*Calyx* 5-partitus. *Corolla* hypocraterimorpha, fauce fornicibus parvis obtusis clausa. *Genitalia* inclusa. *Nuculæ* 4, triquetræ, prope basin lateraliter adfixæ, basi imperforatæ, areola insertionis sublaterali minutâ punctiformi, antice planæ, angulis lævibus aut rarius crenatis.—Herbæ *plerumque annuæ, regionibus temperatis frigidisque hemispheriæ borealis incolæ.* Folia *integra, sæpius alterna.* Flore *racemoso-spicati, ebracteati, sæpe minimi, racemis lateralibus aut ex axillâ folii.* Corolla *sæpius alba aut cærulea.* DC. Prod., v. x. p. 122.

Eritrichium *nanum;* humile, dense cæspitosum, pilis longis sericeis canosericeum, foliis densissime confertis obtusis obovato-oblongis sessilibus, floribus breviter racemosis v. ad apices ramulorum subsolitariis et subsessilibus, calycis lobis lineari-oblongis obtusis, corollæ tubum æquantibus, corollæ intense azureæ lobis orbiculatis sinubus appendiculatis, **nuculis ovatis ad angulos laterales pectinatis.**

Eritrichium nanum, *Schrad. Diss. Asperif. in Comm. Goett.* v. iv. p. 186; *Koch. Fl. Germ.* p. 505; *A.DC. in DC. Prod.* v. x. p. 124; *Reichb. Fl. Germ.* t. 1325.

Myosotis nana, *Vill. Dauph.* v. ii. p. 459, t. 13.

To the skill and energy of Mr. Backhouse of York, is due the credit of being the first to rear to perfection the most brilliant of all of those diminutive alpine gems, which inhabit the loftiest summits of the European mountains. In intensity of colour the blue of *Eritrichium nanum* is equalled only by that of the Alpine gentians, whilst it is of a much more azure hue than any of these, approaching most nearly to the deepest blue of the sky, at a point of the heavens opposite the sun's position, as seen on a cloudless

day from the elevation the plant itself inhabits. This species is found along the whole range of the Alps, from the South of France to Carniola, always growing in stony places fed by snow rills, at elevations from six to twelve thousand feet; thus attaining a locality equal to or exceeding that of any other European dicotyledonous plant. Mr. Backhouse's specimens, from which the accompanying drawing was taken, flowered in May of the present year.

Descr. Densely tufted, forming hoary patches starred with azure-blue flowers. *Stems* very short, and leaves and calyces clothed with rather silky white hairs. *Leaves* one quarter to one third of an inch long, sessile, linear-obovate or oblong, obtuse, concave, ciliated with long white hairs. *Flowers* almost solitary or in short few-flowered terminal racemes, one quarter of an inch diameter, very shortly pedicelled, pinkish-purple before expansion. *Calyx-lobes* linear-oblong, obtuse, equalling the short corolla-tubes. *Corolla-lobes* orbicular, with a raised tooth at the sinus, concave, brilliant azure blue, with a yellowish eye, throat with five two-lobed pubescent transverse swellings. *Stamens* wholly included. *Ovary-lobes* with thickened sides. *Styles* included; stigma simple.—*J. D. H.*

Fig. 1, Leaf; 2, flower; 3, corolla laid open; 4, portion of calyx and young fruit:—*all magnified.*

W. Fitch del et lith

Vincent Brooks Day & Son imp

Tab. 5854.

ASIMINA TRILOBA.

North American Papaw or Custard Apple.

Nat. Ord. Anonaceæ.—Polyandria Polygynia.

Gen. Char.—*Sepala* 3, ovata, valvata. *Petala* 6, biseriatim valvata, mox aperta et producta, subæqualia v. interiora minora. *Stamina* ∞, linearicuneata, connectivo ultra loculos dorsales discretos pulvinato-dilatato. *Torus* subglobosus. *Carpella* 3-15, stylo oblongo intus stigmatoso, ovulis ∞ biserialibus. *Baccæ* oblongæ, crassæ, inter semina haud constrictæ. *Semina* arillo membranaceo-succoso inclusa.—Frutices v. arbores *parvæ*, Americæ borealis *incolæ*. Folia *decidua*, *pennivenia*. Flores *laterales* v. *axillares*, *solitarii*, *breviter pedunculati*, *nutantes*. Fructus *magnus*.

Asimina *triloba*; foliis membranaceis obovato-oblongis lanceolatisve abrupte acuminatis, junioribus ferrugineo-tomentosis cito glabratis, floribus cum foliis coetaneis solitariis subsessilibus, petalis ovato-rotundatis luride purpureis venosis, exterioribus sepalis bis terve superantibus, carpellis maturis breviter cylindricis.

Asimina triloba, *Dunal. Anonac.* p. 83. *DC. Syst. Veg.* vol. i. p. 479.—*Prod.* vol. i. p. 87. *A. Gray, Ill. Gen. N. Am. Pl.* vol. i. p. 67, t. 26 and 27.

Uvaria triloba, *Tor. and Gr. Fl. N. Am.* vol. i. p. 45.

Orchidocarpa arietinum, *Mich. Fl.* i. p. 329.

Anona triloba, *Linn. Sp. Pl.* p. 578. *Schkuhr, Handb.* vol. i. p. 95, t. 149. *Michaux, Arb. Amer.* vol. v. p. 161, t. 9. *Poit. and Turp. Arbr. Fruit*, p. 54.

A very curious plant, and rare in cultivation, a native of the banks of streams in the Middle, Southern, and Western States of N. America, where it forms a small tree, fifteen to thirty feet high, flowering in March and April; and bearing in Autumn a yellow, fragrant, fleshy, eatable fruit called both "Custard Apple," and "Papaw" in the States, (though equally widely different from the fruit of the Custard Apple

proper, *Anona reticulata*, and of the true Papaw, *Carica Papaya*.) "Asiminier," was the name applied to it by the early French colonists of America.

Asimina triloba was introduced into England by Peter Collinson in 1736, and probably old trees of it may still linger in Botanic and other Gardens. The plate here given is from plants raised from seeds presented to the Royal Gardens by Professor A. Gray, of Cambridge, U.S.A., which were trained against a wall, and flowered in June of the present year.

Descr. A small deciduous-leaved shrub or small tree, with dark brown bark and fœtid wood. *Leaves* six to twelve inches long, very membranous, shortly petioled, obovate or oblong-lanceolate, abruptly acuminate, slightly pubescent beneath, young buds covered with shining ferruginous pubescence, nerves slender, spreading. *Flowers* appearing with the young leaves, but from separate buds, solitary, shortly peduncled, drooping, two inches diameter, young clothed with small deciduous scales; peduncle cylindric, one inch long. *Sepals* three, broadly ovate obtuse or orbicular, concave, deciduous, green. *Outer petals* two or three times as long as the sepals, twice as long as the inner, broadly ovate, spreading, and recurved, obtuse, green at first and crumpled, then dull brown, deeply reticulated and rugose; inner similar, with a yellowish interrupted band across the middle. *Stamens* in a globose mass on the torus, minute, yellow. *Ovaries* five, green. *Fruit* of one to three cylindric berries, two to five inches long. *Seeds* one inch long, oblong, compressed, imbedded in a fleshy aril; testa crustaceous, shining.—*J. D. H.*

Fig. 1, Flower with petals removed; 2, torus and ovaries; 3, stamen; 4, fruit: *all but* f. 4 *magnified*.

3
2
1

Tab. 5855.

CYPRIPEDIUM candidum.

Small white Lady's Slipper or Moccasson Flower.

Nat. Ord. Orchideæ.—Gynandria Diandria.

Gen. Char. (*Vide supra*, Tab. 4901.)

Cypripedium *candidum ;* pubescens, caule folioso, foliis lanceolatis acuminatis plicato-nervosis, floribus parvis solitariis, bractea magna lanceolata florem superante, sepalis viridibus purpureo-lineatis, dorsali ovato-lanceolato acuminato erecto, lateralibus in laminam dorsali subsimilem labello suppositam connatis, petalis longioribus linearibus tortis, labello parvo albo inflato sepalis breviore, staminodia oblongo-lanceolato obtusa **γ. acuta.**

Cypripedium candidum, *Muhl. in Willd. Sp. Pl.* vol. iv. p. 142. *Pursh. Fl. N. Am.* v. ii. p. 594. *A. Gray, Man. Bot. N. U. States*, ed. 5, p. 511.

A rather rare native of bogs, from the Central and New York States of N. America to Kentucky and Wisconsin, extending thence into Canada to the northward, and to the Platte Plains and Rocky Mountains to the westward. As a species it is closely allied to the more common American yellow-flowered *C. pubescens* (Tab. Nost. 911, sub nom. *parviflori*) and *C. parviflorum* (Tab. Nost. 3024), from which in a dried state it is with difficulty distinguishable, but from both of which the colour of the flower separates it, whilst the former has a much larger flower and more globose lip. Like all the boreal *Cypripedia*, this is easily cultivated in a bog soil, with a cool bottom, plenty of shade, and a copious littering of dead leaves. The specimen figured was from roots communicated by Mr. J. Dunlop, of Milwaukie, U.S. America, which flowered at Kew in May of the present year.

Descr. Whole plant more or less glandular-pubescent.

Roots of erect, tufted, tortuous fibres. *Stem* six to ten inches high, leafy to the top. *Leaves* lanceolate or elliptic-lanceolate, acuminate, plaited, three to five inches long, rarely one and a half inch broad. *Bracts* erect, leaf-like, exceeding the flower. *Sepals* one inch long, slightly pubescent, green, with brown-purple nerves and tip; dorsal ovate-lanceolate, acuminate, twisted; two lateral connate into an ovate-lanceolate, two-toothed blade placed under the lip. *Petals* larger than the sepals, of the same colour, narrow, twisted, spreading. *Lip* two-thirds of an inch long, oblong, rounded at the tip, inflated, rather flattened at the sides, white with purple spots round the mouth and within opposite the mouth, neck villous and yellow within. *Staminode* yellow, spotted with purple, ovate or oblong-lanceolate, obtuse or acute.—*J. D. H.*

Fig. 1, Top of ovary and column; 2, top of column; 3 lip:—*all magnified.*

W Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

3876.

Tab. 5856.

CEREUS fulgidus.

Glittering-flowered Cereus.

Nat. Ord. Cacteæ.—Icosandria Monogynia.

Gen. Char. (*Vide supra* Tab. 5360.)

Cereus *fulgidus*; caule elongato gracili ramoso, internodiis elongatis 1-poll. diam. profunde 3-4 gonis, angulis compressis margine obtusis fasciculato-spinosis, spinis ad 10 parvis gracilibus, areolis tomentosis, floribus 6-8 poll. diam., calycis tubo 3-4-pollicari cylindrico hirsuto bracteolis parvis ovato-lanceolatis incurvis rubris obsito, foliolis calycinis 3-4-seriatis lanceolatis recurvis acuminatis pallide coccineis externis angustioribus, corollinis 2-3-seriatis obovato-oblongis suberectis apiculatis sanguineis fulgidis, staminibus petalis brevioribus, stylo staminibus longiore, stigmatibus ad 15 subulatis radiantibus.

I regret to have to state that the history of the plant here figured is quite unknown to me. It has been cultivated in the Royal Garden for a good many years, flowering annually, and has been seen by various collectors, none of whom have recognised it. In many of its characters it resembles the *C. Pitajaya*, Jacq., of Brazil, which is merged with some eight or ten garden and other species into one called *C. variabilis* by Pfeiffer, and I should not be at all surprised if it proved to be a hybrid between that plant, which is white-flowered, and some scarlet-flowered *Cactus*; though it differs from *C. variabilis* in the laxer habit, and flowering only in the evening and night. The habit indeed is that of *C. speciosissimus*. It flowers in July, the flower opening in the early evening and remaining expanded till the following noon.

Descr. *Stems* pale bright green, not glaucous, 2 to 3 feet high, 3- to 4-angled, one inch and a half diameter, angles much compressed, starting from near the axis, so that on a transverse section the wings or angles appear as narrow

arms about one-eighth of an inch thick; margin obtuse, notched at intervals of one to one inch and a half; areolæ at the notches small, with yellow tomentum; spines about half an inch to three-quarters long, slender, straw-coloured, tipped with brown, about three of them central. *Flowers* situated at the notches, six to seven inches diameter. *Calyx-tube* three to four inches long, three-quarters of an inch in diameter in the middle, laxly pilose with long soft hairs, obscurely ribbed, clothed with scattered ovate-lanceolate acuminate incurved bracteoles one-third of an inch long. *Outer* (*calycine*) *perianth* segments, in about three to four series, ovate-lanceolate, acuminate, recurved, pale scarlet, outermost narrow, inner passing into the corolline segments, which are in two to three series, suberect, oblong-ovate, acute, blood-red, glossy with a metallic lustre. *Stamens* very numerous, shorter than the petals. *Style* longer than the stamens, very stout; stigma with about fifteen subulate rays. *Ovary* ovoid, scarcely broader than the calyx tube.—*J. D. H.*

Fig. 1, Notch of stem, with spines; 2, top of style and stigma:—*both magnified.*

W Fitch, del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5857.

BRODIÆA coccinea.

Scarlet-flowered Brodiæa.

Nat. Ord. Liliaceæ.—Hexandria Monogynia.

Gen. Char.—*Peranthium* corollinum, tubulosum v. campanulatum, angulatum, persistens, limbo 6-fido. *Stamina* 3, perianthii fauce inserta, cum squamis totidem liberis v. in coronam connatis alternantia, filamentis brevissimis v. 0; antheræ lineari-oblongæ, inclusæ. *Discus* hypogynus, carnosus v. obsoletus. *Ovarium* pedicellatum, 3-loculare, in stylum elongatum rectum attenuatum, stigmate 3-lobo; ovula numerosa. *Capsula* pedicellata, perianthio inclusa, 3-locularis, 3-valvis, oligosperma. *Semina* compressa, testa membranacea, atra.—Herba *bulbo tunicato.* Folia *linearia.* Scapus *gracilis, apice bracteatus.* Flores *umbellati, pedicellati, cærulei v. coccinei.*

Brodiæa (§ Brevoortia) *coccinea;* scapo elato, umbella 5-15-flora, perianthio pedicello duplo longiore cylindraceo basi intruso 6-lobo supra medium paulo inflato coccineo apici aureo, lobis parvis recurvis viridibus, squamis in coronam erosam 6-lobam connatis.

Brodiæa coccinea, *A. Gray in Proc. Amer. Acad.*, vol. vii. p. 389.
Brevoortia Ida-maia, *A. Wood in Proc. Acad. Philad.*, June, 1867.

Though differing from all of the four previously described species of *Brodiæa*, in the length and cylindric form of the perianth, and in the great size of the scales at its mouth, I am disposed to think that Dr. Gray is right in referring it to that genus, and abandoning the genus *Brevoortia*, which was made by Professor Wood for this plant, and not without apparent good cause, for in the form of its perianth and size of the scales it differs widely from its congeners. It need hardly be added that Dr. Gray is justified in discarding "the objectionable double-headed specific name (Ida Maia), given by the stage driver, Mr. Burke, who showed the plant to Professor Wood, in affection for his little daughter."

September 1st, 1870.

Brodiæa coccinea is a most brilliant-flowered bulb, a native of Shasta County and Humboldt County in California, where it was discovered by Mr. Lobb, and afterwards collected and named by Wood. More recently it has been sent to England by Mr. Bolander of San Francisco, and flowered both with Mr. Thompson of Ipswich, and in the Royal Gardens of Kew, May and June.

Descr. *Bulb* the size of a small chestnut. *Leaves* ten to eighteen inches long, one quarter to one-third of an inch broad, linear, obtuse, concave above, convex on the back. *Scape* equalling the leaves, slender, erect. *Umbels* five to fifteen-flowered; bracts membranous, lanceolate, shorter than the curved pedicels. *Flowers* drooping, one inch and a half long, rather blood-red than scarlet, abruptly replaced by yellow below the lobes, which are green. *Perianth-tube* six-lobed at the base, inflated above the middle; lobes short, oblong-ovate, obtuse, recurved. *Corona* of six erect membranous cuneate erose scales at the mouth of the perianth. *Anthers* sessile, their tips exserted. *Disk* obscure. *Ovary* elliptic-ovoid. *Seeds* oblong, black.—*J. D. H.*

Fig. 1, Perianth laid open; 2, pistil; 3, transverse section of pistil:—*all magnified.*

W. Fitch, del. et lith

Vincent Brooks, Day & Son, Imp

Tab. 5858.

ONCIDIUM cryptocopis.

Long-sepalled Oncidium.

Nat. Ord. Orchideæ.—Gynandria Monandria

Gen. Char. (*Vide supra*, Tab. 4148.)

Oncidium (Cyrtochilum) *cryptocopis;* pseudobulbis elongatis compressis, foliis loriformi-lanceolatis acutis, panicula 3-5-pedali longissima volubili, ramulis tortuosis bracteatis, bracteis spathaceis, sepalis petalisque castaneis apicibus recurvis marginibus aureis crispatis, sepalo dorsali unguiculato deltoideo, lateralibus longe unguiculatis obovato-spathulatis deflexis, petalis breviter unguiculatis deltoideo-lanceolatis, labello parvo recurvo, laciniis lateralibus parvis recurvis acinaciformibus serratis, intermedio longe unguiculato dilatato recurvo transverse oblongo sub 2-lobo marginibus crispatis, disco basi calloso et carinato callis prominentibus varie tuberculato et sulcato, columna brevi alis cuneatis carnosis basi processubus 2 cultriformibus aucta.

Oncidium cryptocopis, *Reich. fil. Gard. Chron.*, 1870, p. 826.

A very fine species of the group to which belong *O. Xanthodon* (Tab. nost. 5756), and other Cordilleran congeners, characterized by their very long flexuous twining racemes, chestnut-brown perianth-lobes, with crisped golden edges, and usually very small lip. It was imported from Peru by Mr. Bull, F.L.S, and flowered in his establishment, King's Road, Chelsea, in May last.

Descr. *Pseudo-bulb* four to five inches long, lanceolate, much compressed, green, one inch broad. *Leaves* a foot long, ovate-lanceolate, rather broader beyond the middle, acute, pale green. *Panicle* three to five feet long, much branched, slender, as thick as a crowquill, with sheathing lanceolate scarious bracts; pedicels flexuous, three to five inches long, also bracteate. *Flowers* three inches across the tips of the sepals, pale chestnut with golden crisped margins of the se-

pals and petals, and a broad yellow middle lobe of the lip. *Upper sepal* deltoid-ovate, recurved, with a short broad claw; lateral sepals parallel and deflexed, much longer than the upper, with long claws that expand into an obovate-cuneate limb recurved at the lip. *Petals* ovate-lanceolate, with broad claws, recurved, as long as but narrower than the dorsal sepal. *Lip* about half as large as the petals, recurved and almost revolute; lateral wings small, hatchet-shaped, serrate on one margin, sharply recurved; midlobe paddle-shaped, consisting of a long flat claw and transversely oblong limb one-third of an inch across, which is turned completely back and thus hidden; base of the lip with various crests and tubercles, which are confluent with those of the base of the column, and two small lateral auricles. *Column* short, with two small cuneate fleshy spreading wings, and two flattened subulate or decurved horns in front.—*J. D. H.*

Fig. 1, Magnified view of column and lip.

Vincent Brooks Day & Son, Imp.

Tab. 5859.

TABERNÆMONTANA Barteri.

Mr. Barter's Tabernæmontana.

Nat. Ord. Apocyneæ.—Pentandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5226.)

Tabernæmontana *Barteri*; glabra, ramulis dichotomis, foliis breviter petiolatis elliptico-oblongis ovatis v.-lanceolatis utrinque acuminatis integerrimis membranaceis, pedunculis 3-∞ floris, bracteis parvis ovato-oblongis acutis sepalis $\frac{1}{4}$ poll. longis oblongis obtusis dimidio brevioribus, corollæ 2 poll. diam. albæ tubo ultra calycem contracto, supra medium infundibuliformi, lobis oblique cuneato-obovatis, folliculis ovoideo-oblongis falcato-recurvis rostratis $1\frac{1}{2}$ poll. longis.

A handsome shrub, six to eight feet high, discovered by the lamented collector Barter during Baikie's Niger Expedition at Eppah, and since collected by Dr. Irving at Abeokuta in the interior of the Slave Coast, and by Mann on the Old Calabar river. From the latter country live plants were sent by the Rev. W. C. Thomson of Old Calabar to the Edinburgh Botanic Gardens, whence the specimen here figured was sent to Kew by Mr. M'Nab, and flowered in spring of the present year. As a species it is closely allied to the *T. subsessilis*, Benth., a native of Liberia and Ambas bay to the westward, but differs decisively in the leaf being narrowed into an acute base; the follicles are also more recurved and beaked.

Descr. A glabrous erect shrub, six to eight feet high. *Branches* dichotomous, terete, slender, covered with white bark, young green. *Leaves* three to six inches long, bright green, elliptic- or oblong- or lanceolate- or obovate-elliptic acuminate at both extremities, dark green on both surfaces, six- to eight-nerved on each side of the midrib; petiole very short. *Peduncle* half to one inch long, naked, several-flowered;

bracts small, one-sixth to one quarter of an inch,ovate-oblong acute; pedicels one-eighth to one quarter of an inch. *Sepals* oblong, obtuse or subacute, convolute, much shorter than the corolla-tube. *Corolla* white, 2 to 3 inches in diameter, tube one to one inch and a quarter long, much contracted at the base, contracted part exceeding the sepals, thence slightly swollen for three quarters of its length, where it again expands and is funnel-shaped; limb quite flat, lobes obliquely obovate-cuneate, acute on one side, dilated and rounded on the other. *Stamens* inserted at the contraction of the tube, filaments very short; anthers broadly subulate. *Disk* small, cup-shaped, lobed. *Ovary* small, 2-lobed; style and capitate lobed stigma included. *Follicles* spreading at right angles, one inch and a quarter to one and a half long, turgid, recurved, with conical recurved beaks. *Seeds* one quarter of an inch long, imbedded in pulp, ovoid; testa brown, reticulate, very deeply pitted.—*J. D. H.*

Fig. 1, Base of corolla cut open; 2, stamen; 3, pistil and disk:—*all magnified.*

Vincent Brooks, Day & Son lith.

Tab. 5860.

SALVIA interrupta.

Ash-leaved Sage.

Nat. Ord. Labiatæ.—Didynamia Gymnospermia.

Gen. Char. (*Vide supra*, Tab. 5274.)

Salvia (Eusphace) *interrupta;* caule suffruticoso, ramis villoso-viscosis, foliis petiolatis irregulariter pinnatisectis grosse rugosis subtus albido-tomentosis, segmento extremo maximo lateraliumque paribus 1-2 ovato-oblongis basi rotundatis, segmentis aliis minimis rotundatis interjectis, floralibus membranaceis deciduis, racemo simplici, verticillastris sub 6-floris remotis, calyce tubuloso-campanulato striato villoso-viscoso, labio superiore 3-dentato, inferiore 2-fido, dentibus omnibus acutis, corolla calyce duplo triplove longiore cæruleo, labio superiore subhorizontali, inferioris lateralibus reflexis intermedio 2-lobo, connectivo antice porrecto loculo casso.—*Benth.*

Salvia interrupta, *Schousb. Beob. Marok.* p. 7, t. 1. *Jacq. Fragm.* p. 61, t. 90? *Hort. Kew. ed.* 2, v. i. p. 65. *Benth. in DC. Prod.* v. xii. p. 266.

A tall hardy herbaceous plant, with a woolly suffrutescent stem, belonging to the same set of sages with *S. officinalis*, and many other handsome species that are common ornaments of continental gardens, but are all but wholly unknown in our own. It was, according to the Hortus Kewensis, formerly cultivated in the Royal Gardens under the name of the Ash-leaved sage, having been originally introduced from Morocco into the Cambridge Botanic Garden, 1798. It has, however, long since disappeared from cultivation, and so remained till three years ago, when it was re-introduced from Tangiers by G. Maw, Esq., of Benthall Hall, during a botanical expedition into N. Africa, from whence he sent living plants to the Royal Gardens that flowered in May of last year. From its habit of flowering through several successive months, it is well worthy of cultivation in the open

border. The plant figured under this name in Sweet's Flower Garden (v. ii. t. 169) is, as Mr. Baker has pointed out to me, no doubt the *S. confusa*, Benth., easily distinguished by its whiter, more minutely rugose leaves, and pale flowers.

Descr. *Stem* erect, shrubby below ; branches, inflorescence, and calyx covered with viscid down. *Branches* slender, four-angled, erect, rather distantly leafy. *Leaves* six to ten inches long, spreading, pinnatisect, green and coarsely rugose above, clothed below with white tomentum ; terminal lobe two to three inches long, oblong-ovate, obtuse or acute, rounded or cordate at the base, strongly nerved, coarsely reticulate and deeply pitted beneath, margin irregularly crenate ; lateral segments distant, often alternately large and oblong and small and rounded, sessile or shortly petioled. *Whorls* of flowers numerous, two to three inches apart, five to ten flowered. *Flowers* nearly sessile ; bracts minute, ovate, acute ; bracteoles shorter, broader. *Calyx* viscid, half an inch long, deeply grooved, tubular campanulate, shortly two-lipped ; teeth triangular, acute, upper dorsal very small, obtuse. *Corolla* one inch and a quarter long by one inch diameter, dark violet purple, with a white throat ; tube exserted, nearly straight, smaller at the throat, red purple. *Upper lip* short, nearly horizontal, laterally compressed, obcordate, two-lobed at the apex ; lower lip three-lobed ; lateral lobes broad, rounded, reflexed ; middle rather deeply lobed, rounded, recurved ; palate prominent, and throat white with purple streaks. *Anther cells* separated by a curved connective, upper linear oblong, lower smaller. *Disk* large, four-lobed. *Style* slender.—*J. D. H.*

Fig. 1, Tips of filaments and anthers, with rudiments of the lower pair of stamens between them ; 2, calyx and style ; 3, disk and ovary :—*all magnified.*

1.

2

3.

4.

W Fitch del et lith

Vincent Brooks Day & Son Imp

Tab. 5861.

LISSOCHILUS Krebsii.

Mr. Kreb's Lissochilus.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5486.)

Lissochilus *Krebsii;* pseudobulbis ovoideis, foliis sessilibus breviter vaginantibus elliptico-lanceolatis acuminatis plicatis membranaceis marginibus lævibus nervis validis, racemo erecto laxo multifloro, bracteis anguste lanceolatis ovario subæquilongis, floribus $1\frac{1}{2}$ poll. latis, sepalis refractis oblongis acutis subundulatis viridibus purpureo-maculatis, petalis sepalis 4-plo majoribus aureis patentibus late ovatis obtusis breviter unguiculatis, labello sessili medio saccato sepalis minore 3-lobo, lobis lateralibus brevibus ovato-rotundatis ascendentibus, intermedio ovato-rotundato apice emarginato lateribus a medio reflexis basi obtuse 3-cristato, calcare brevi obtuso.

Lissochilus Krebsii, *Reich. f. in Linnæa*, vol. xx. p. 685.

Lissochilus Krebsii was first described by Reichenbach in 1847, from specimens sent to Europe by the collector whose name it bears. For that here figured, the Royal Gardens are indebted to their old and valued correspondent, John Sanderson, Esq., of Natal, who contributed living plants in 1867 along with those of three other species of this interesting genus. It has also been received from Mr. McKen, of the Natal Botanic Gardens; and we have dried specimens from Mr. Gerrard (who died subsequently when botanizing in Madagascar), also collected in the Natal colony a good many years ago. Though closely allied to several East-tropical African species, collected by Drs. Kirk, Meller, and others, during Livingstone's second expedition, it does not seem to be identical with any of these, having a broader midlobe of the lip and longer spur.

October 1st, 1870

Descr. *Pseudo-bulbs* two to three inches long, ovoid, or elliptic-oblong, green, marked with few concentric scars. *Leaves* in copious tufts from the base of the pseudo-bulb, sessile, very shortly sheathing, eight to twelve inches long, two to three inches broad, elliptic-lanceolate, acuminate, plaited, strongly ribbed, bright green, paler beneath. *Scape* two to three feet high, stout, terete, inclined. *Raceme* twelve to eighteen inches long, twenty- to thirty-flowered. *Flowers* scattered, an inch and a quarter diameter; bracts lanceolate, acuminate, green, equalling the ovary. *Sepals* broadly linear-oblong, bent sharply back, acuminate or cuspidate, rather twisted or waved, green, with dull purple blotches. *Petals* spreading, three to four times as large as the sepals, two-thirds of an inch broad, broadly ovate, obtuse, shortly clawed, pale golden-yellow, convex, the two halves being rather reflexed from the middle line. *Lip* pendulous, sessile, about as long as the petals, but narrower, three-lobed, saccate between the lateral lobes, which are small, rounded, ascending on each side of the column, brownish inside; midlobe nearly orbicular, notched at the tip; sides bent back from the middle, which is obtusely crested towards the base. *Spur* short, broad, obtuse. *Column* short, stout.—*J. D. H.*

Fig. 1, Side view of column and lip; 2, front view of do.; 3 and 4, side and front views of pollen:—*all magnified.*

W Fitch, del et lith

Vincent Brooks Day & Son, Imp

Tab. 5862.

CALOCHORTUS Leichtlinii,

Max Leichtlin's Calochortus.

Nat. Ord. Liliaceæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5804.)

Calochortus *Leichtlinii;* humilis, foliis gramineis $\frac{1}{8}$ poll. latis longe vaginantibus dorso rotundatis facie concavis anguste acuminatis glauco-viridibus, marginibus incurvis, scapo gracili foliis paulo longiore 2-3-floro, spathis foliis consimilibus, floribus $2\frac{1}{2}$ poll. diam. late campanulatis, sepalis ovato-lanceolatis recurvis dorso medio fuscis, petalis demum reflexis latissime obovato-cuneatis apiculatis marginibus vix erosis albis plaga parva purpurea supra foveam nectariferam $\frac{1}{2}$ circularem, basin versus extus gibbosis intus pauci-ciliatis, antheris flavis obtusis, ovario lineari-oblongo, stylo brevi, stigmatibus 3 brevibus recurvis.

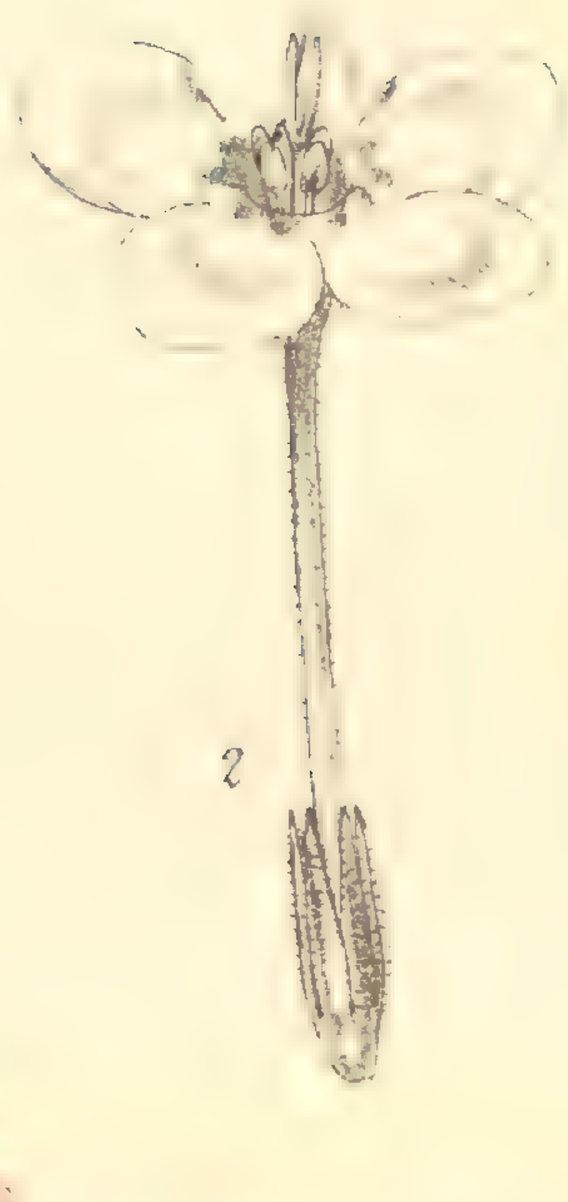
The beautiful genus *Calochortus* was first brought to notice in England by the late David Douglas, who, during his exploration of the north-west districts of North America, transmitted bulbs of various species, both of this and of its close ally, *Cyclobothria*, to the Horticultural Gardens, some of which were figured in the early numbers of the *Botanical Register*, and in the "Transactions of the Horticultural Society" (v. vii., t. 8 and 9, v. viii. t. 14 and 15, &c.), and in a few other works. These all, however, very soon disappeared from cultivation, no doubt owing to neglect during their long dormant, or flowerless, season. Now, however, after a lapse of nearly forty years, they are again coming into cultivation, and will, I hope, prove to be permanently established favourites. The species here figured differs from any of the twelve or more that have been described, or are preserved, in our Herbaria, and far exceeds in showiness the graceful little plant figured in our last year's volume as *C. uniflorus* (Tab. 5804); it was discovered by Mr. Roezl in the Sierra Nevada of California, and

transmitted by him to our excellent correspondent, Max Leichtlin, of Carlsruhe, who sent bulbs to the Royal Gardens in November last. These flowered in June of the present year, and are here figured. The flowers open almost in pairs at a time, and last for several days in perfection. As a species it is very near the *C. venustus*, Benth. (*Bot. Reg.*, t. 1669); but the plant is much smaller, leaves narrower, flowers much smaller, with only a single purple spot on the sepals above the nectary, and no purple band below the nectary: the sepals, too, are not green.

Descr. *Bulbs* ovoid. *Scapes* four to seven inches high, slender, erect or inclined, terete, leafy. *Leaves* very narrow, one-eighth to one-sixth of an inch, sheathing, glaucous-green, gradually narrowed from the sheath to the tip, rounded on the back, very concave in front; margins incurved. *Spathes* like the leaves, hardly exceeding the flowers. *Flowers* two inches and a half in diameter when fully expanded; peduncles yellow-green. *Sepals* ovate-lanceolate, acuminate, recurved, concave, white, with a broad purple-brown streak on the back, tips pink. *Petals* broadly obovate-cuneate, apiculate, obscurely erose, concave at the base, gibbous at the back, reflexed from above the middle when fully expanded, white, with a single purple blotch above the nectary; nectary semicircular, green, surrounded with a pale yellowish blotch, and some slender filamentous hairs. *Anthers* linear-oblong, yellow. *Ovary* green, linear-oblong, style very short, stigmas short, recurved. —*J. D. H.*

Fig. 1, Base of petal and nectary; 2, ovary:—*both magnified.*

1.



2

W Fitch del et lith

Vincent Brooks, Day & Son, Imp

Tab. 5863.

LEPTOSIPHON PARVIFLORUS, VAR. ROSACEUS.

Rosy-flowered Leptosiphon.

Nat. Ord. Polemoniaceæ.—Pentandria Monogynia.

Gen. Char.—*Calyx* tubuloso-campanulatus, æqualis, semi-5-lobus, lobis lineari-subulatis acutis, sinubus membranaceis. *Corolla* hypocrateriformis, tubo elongato tenuissimo, limbi lobis 5 planis obtusis v. subacutis. *Stamina* 5, fauce corollæ inserta; antheræ oblongæ, basi sagittatæ, vix exsertæ. *Ovarium* 3-loculare; stylus terminalis, simplex, stigmate 3-fido; ovula pauca v. numerosa. *Capsula* 3-locularis, loculicide 3-valvis, valvis columnam septiferam nudantibus. *Semina* pauca, angulata, testa spongiosa.—Herbæ *annuæ* Americæ boreali-occidentalis *incolæ*, *caulibus tenuibus rigidis*. Folia *opposita*, *sessilia palmatisecta*, *glabra v. pilosa*, *laciniis angustis palmatim patentibus*. Flores *capitati*, *basi foliaceo*, *bracteati*, *albi rosei lutei v. lilacini*.

Leptosiphon *parviflorus*; foliis 3-7-fidis inferiorum segmentis oblongo-linearibus superiorum subulatis, calycis laciniis linearibus, corollæ tubo limbo sub 4-plo longiore, lobis rotundatis, staminibus limbo corollæ vix dimidio brevioribus.

Leptosiphon parviflorus, *Benth. in Bot. Reg. sub.* t. 1622.

Gilia (Leptosiphon) micrantha, *Steud. ex Benth. in DC. Prodr.* vol. ix. p. 311.

Var. *rosaceus*; corolla $\frac{1}{2}$-$\frac{2}{3}$ poll. diam. rosea disco aureo v. albo.

A most lovely representative of one of the most variable genera of hardy annuals, the limits between the species of which are as difficult to draw from living specimens as from herbarium ones. I have referred the subject of the present plate to *L. parviflorus*, though its flowers are so much larger than those of the typical states of that plant, being able to find no other difference but this of size (they are fully twice as large as in most states of *L. parviflorus*) and of colour, which however varies in the typical plant from white to lilac and yellow, and in this variety from a very pale to a very deep rose-red. In respect to the size of the flower

it agrees with *L. androsaceus* (Tab. Nost. 3491), one of the largest flowered of all, but which has much narrower corolla lobes, of a very different shape. *L. grandiflorus* and *L. densiflorus* (Tab. Nost. 3578), also as large flowered, have on the other hand, a very short corolla tube.

I am indebted to Mr. Thompson of Ipswich for the fresh specimens from which the accompanying drawing was made; and which flowered in his nurseries in June of the present year. It is a native of California, and perfectly hardy; but probably, like its congeners, does best in rather a damp climate.

Descr. A slender annual. *Stem* very variable; height four to ten inches, wiry. *Leaves* half to three-quarters of an inch long and broad, palmately cut to near the base into slender linear spreading apiculate lobes, dark green, pilose with soft white hairs. *Flowers* crowded, erect. *Calyx-lobes* subulate. *Corolla-tube* an inch to an inch and a-half, white or nearly so. *Limb* half to three-quarters of an inch in diameter, pale or deep rose-coloured, with a white or yellow eye; segments orbicular and somewhat overlapping, quite entire. *Stamens* included, yellow.—*J. D. H.*

Fig. 1, Leaf; 2, flower; 3, ovary, style and stigmas:—*all magnified.*

1.

W Fitch. del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5864.

PASSIFLORA arborea.

Tree Passion-flower.

Nat. Ord. Passifloreæ.—Pentandria Trigynia.

Gen. Char. (*Vide supra*, Tab. 5737.)

Passiflora (Astrophea) *arborea;* caule erecto, ramis patentibus teretibus, cirrhis nullis, foliis amplis membranaceis obovatis oblongis ellipticisve acutis integerrimis subtus glaucis, costa subtus sparse glandulosa, petiolo crasso, stipulis linearibus deciduis, pedunculis pendulis axillaribus pauciflоris, pedicellis curvis, perianthio erecto tubo brevi, sepalis petalisque consimilibus albis oblongis obtusis, corona triplici, seriei externi filamentis magnis erectis crassiusculis subclavatis 3-gonis undulatis v. subcrispatis, intermedii filamentis parvis subcylindricis, interni filamentis tubum medio claudentibus apice fimbriatis, bacca 1-2-unciali coriacea.

Passiflora arborea, *Spreng. Syst. Veg.*, vol. iii. p. 42.

Passiflora glauca, *Humb. and Bonpl. Plant. Æquinoct.* t. 22; *DC. Prodr.*, vol. iii. p. 322. *Masters in Gard. Chron.* 1867, p. 1070.

Though displaying none of the beauty of the commoner cultivated Passion-flowers, and wanting their scandent habit, copious festoons of leaves, and elegant tendrils, the subject of the present plate is still a very interesting one, from its erect habit and large foliage; in which respect it stands almost alone amongst its 120 congeners. Dr. Masters, who has given a careful detailed description of it in the *Gardener's Chronicle*, and who quotes the observations of its introducer, Mr. Cross, made in its native woods, describes it as growing from one to twelve feet high, bearing few beautifully smooth dark green pendulous leaves, one to three feet long, and looking like a green umbrella stuck in the ground.

P. arborea is a native of the damp shady forests of the mountainous districts of New Grenada, Equador, and Venezuela, extending to an altitude of 6000 feet above the sea, where it

was discovered by Humboldt and Bonpland in the beginning of the century. There is a fine suite of specimens of it in the 'Hookerian Herbarium,' collected by Triana, Linden, Spruce, Fendler, and Goudot. The Royal Gardens are indebted to Mr. Bull, F.L.S., for the specimen here figured, which flowered in a stove in July of the present year.

Descr. *Stem* one to fourteen feet high, slender, erect, terete, glabrous, sparingly branched; branches horizontal or drooping. *Leaves* drooping, six to thirty inches long, oblong elliptic or obovate, acute or obtuse, base acute rounded or subcordate, deep green above, glaucous beneath, midrib with a few small glands below; petiole very stout, cylindric, grooved above, an inch to an inch and a half long. *Stipules* linear, deciduous. *Peduncles* three- to six-flowered, pendulous, terete, an inch to an inch and a half long; pedicels suddenly curved upwards from the middle, so that the flowers are erect, articulate towards the curvature. *Flowers* two or three inches broad; bracts 0. *Perianth-tube* one and a half to two inches long, terete, green. *Sepals* and *Petals* equal and similar, linear-oblong, obtuse, greenish-white inside, reflexed. *Corona* triple, outer of waved or wrinkled, long, yellow, subclavate, obliquely truncate filaments half to two-thirds as long as the petals; middle, a ring of short filaments round the mouth of the tube; inner, of fimbriate scales placed half-way down the tube, and pressing against the column, thus closing the nectariferous cavity. *Stamens*, *styles*, &c., as in the other species. *Berry* ovoid, one to two inches long, coriaceous, yellow, glaucous.—*J. D. H.*

Fig. 1, Vertical section of perianth-tube, showing the position of the innermost corona:—*slightly magnified.*

J. W. Evelyn del. et lith.

Vincent Brooks Imp.

Tab. 5865.

CLUSIA odorata.

Sweet-scented Clusia.

Nat. Ord. Guttiferæ.—Polyandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5325.)

Clusia *odorata*; ramulis teretiusculis, foliis longiuscule petiolatis anguste cuneato-obovatis v. oblanceolatis subacutis obtusisve coriaceis nitidis, nervo medio (siccitate) subprominulo, lateralibus tenuissimis, cymis paucifloris foliis multo brevioribus, floribus $1\frac{1}{2}$ poll. diam. roseis breviter pedicellatis, bracteis bracteolisque parvis orbiculatis, sepalis 4-5 fere orbiculatis, petalis 4-5 patentibus late obovato-orbiculatis obcordatisve ungue latissimo, staminodiorum cupula crenulata, stigmatis lobis 6-8 triangularibus.

Clusia odorata, *Seem. Bot. Voy., Herald*, p. 89; *Planch. & Lind. Mem. Guttif.*, p. 38.

Clusia rosæflora, *Pl. and Lind., l. c.*

An inhabitant of the volcano of Cheriqui in New Grenada, near Veraguas, where it was discovered by Dr. Seemann, when Botanist on the voyage of H.M.S. *Herald*, in 1849, and by whom living plants were sent to Kew, which have long been cultivated in the Palm House of the Royal Gardens. It has also been found at Panama, by the late Mr. Sutton Hayes; at La Paila, in New Grenada, by Holton; and near Truxillo, in Venezuela, by Linden; for I have little hesitation in referring the *C. rosæflora* of Planchon and Linden to this plant, our specimens, indeed, presenting characters that unite them. Like various other Clusias, this is a subscandent, or half-epiphytic shrub when young, which, after it has established itself and attained a sufficient height, supports itself by its thickened and interlacing roots, as a small tree, without other support.

The plant from which the accompanying drawing was made

October 1st, 1870.

flowered in August, 1869. Its native name is *Copecillo odoroso*.

Descr. A small bushy tree, twenty to twenty-five feet high. *Branches* nearly terete. *Leaves* three to five inches long, by one to two inches broad, obovate-cuneate, or oblanceolate-cuneate, obtuse or subacute, narrowed into a distinct stout petiole, a quarter to half an inch long, uniformly green and smooth on both surfaces; midrib distinct when dry, when also the nerves appear as faint, close-set streaks. *Flowers* usually two to three, pedicelled on a short stout cylindric peduncle, one inch and a half diameter, much like those of a dog-rose, pale rose-red, odorous; bracts and bracteoles not broader than the peduncle and pedicel, rounded, compressed. *Sepals* four to five, orbicular, concave, half as long as the petals. *Petals* broad, orbicular-obovate, or almost obcordate, concave below the middle. *Staminal* cup half embracing the ovary. *Ovary* green, with a sessile five to eight-lobed stigma. *Capsule* five to eight-lobed; valves narrow, recurved. *Seeds* with a fleshy red aril.—*J. D. H.*

Fig. 1, Staminal cup and ovary; 2, vertical section of ditto: 3, transverse section of ovary; 4, ripe capsule burst open:—*all but f.* 4 *magnified.*

1.

2

3.

4

Tab. 5866.

BARLERIA Mackenii.

Mr. McKen's Barleria.

Nat. Ord. Acanthaceæ.—Diandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5628.)

Barleria *Mackenii;* glaberrima, caule obtuse 4-gono, foliis recurvis anguste ovato- v. elliptico-lanceolatis subacutis petiolatis tenuissime strigillosis integerrimis, floribus terminalibus paucis in axillis supremis, bracteis parvis subulatis, sepalis exterioribus amplis late-ovato v. rotundato-cordatis obtusis venosis, interioribus parvis e basi ovato subulato-acuminatis, corollæ purpuræ tubo infundibuliformi calycem æquante, limbi lobis subæqualiter rotundatis basi atro-purpureis, staminodiis 3, 2 lateralibus minutis subulatis intermedio lato apiculato approximatis.

A close ally of the *Barleria Gibsoni* (Tab. Nost. 5628), which it resembles in the corolla, but differs remarkably in the form of the bracts and sepals. It was discovered in the Latin goldfields district of the Natal colony, whence dried specimens were communicated to me by Mr. McKen, of the Natal Botanic Gardens, and who also sent fresh seeds of it from that interesting district in November of last year, from which the plant here figured was raised at Kew in spring, and flowered in June of the present year. We have also dried specimens collected by Messrs. Chapman and Baines, during their journey towards the Zambesi, in lat. 23° S., in the year 1863. Like many of its congeners which inhabit the Peninsula of Hindostan, it probably flowers in the beginning of the cool dry season, and would under proper treatment form a charming acquisition for the winter decoration of a moderately heated house.

The district in which this *Barleria* is found appears to be botanically little known, and to abound in novelties. Amongst others which Mr. McKen has procured, are two

magnificent Heaths, a *Phœnix*, different from *P. reclinata*, and some fine Orchideæ, all of which will no doubt be soon introduced into England through the zeal of the able superintendent of the Natal Botanic Gardens.

Descr.—Probably a small shrub. *Stem* stiff, erect, green, almost terete, and as well as the leaves above clothed with minute appressed hairs. *Leaves* deep green, recurved, two to three inches long by half to one inch broad, narrowly ovate or elliptic-lanceolate, subacute, quite entire, nerves faint; petiole a quarter to half an inch long. *Flowers* few, solitary in the uppermost axils, shortly peduncled. *Bracts* subulate, one-third to half an inch long, placed half way up the peduncle. *Outer sepals* one inch long and nearly as broad, broadly ovate-cordate, obtuse, strongly palmately nerved, coriaceous, minutely hairy like the leaves, margins incurved; inner sepals lanceolate-subulate, much shorter than the outer, pubescent on both surfaces, ciliate. *Corolla-tube* funnel-shaped, shorter than the outer sepals; limb two inches diameter, purple, flat; three larger lobes orbicular, two smaller ovate obtuse emarginate, all with a dark purple blotch above the claw, that on the lower segment edged with a white line. *Anthers* nearly white. *Staminodes* three, middle broad, lateral subulate. *Ovary* pubescent; stigma linear.—*J. D. H.*

Fig. 1, Base of corolla-tube with stamens and staminodes; 2, outer sepals; 3, inner ditto, disk and ovary; 4, disk and ovary:—*all magnified.*

W Fitch, del et lith

Vincent Brooks Day & Son. Imp

TAB. 5867.

ŒNOTHERA WHITNEYI.

Whitney's Evening Primrose.

Nat. Ord. ONAGRARIEÆ.—OCTANDRIA MONOGYNIA.

Gen. Char. (*Vide supra*, TAB. 5828.)

ŒNOTHERA (Godetia) *Whitneyi;* minute puberula, caule simplici v. e basi ramoso valido ad apicem foliato, foliis oblongo-lanceolatis subintegerrimis, floribus amplis confertis, calycis tubo obconico segmentis multo breviore, antheris linearibus, stigmatibus linearibus elongatis, capsulis carnosis subsessilibus oblongo-fusiformibus cano-hirsutis, loculis polyspermis, seminibus adscendentibus.

ŒNOTHERA (Godetia) Whitneyi, *A. Gray in Proc. Amer. Acad.*, vol. vii. p. 340, June 11, 1867.

Dr. Asa Gray, the authority for this species, describes it as "the most splendid of all the *Godetias*, and very desirable for cultivation, from the fine colour and great size of the flowers crowded at the summit of the stem," and states that he has named it after Professor Whitney, the distinguished head of the Californian State Geological Survey; in the prosecution of which it was discovered. It was first collected by Dr. Bolander, botanist to the Survey, on the plains at Shelter Cove, Humboldt County, California, in 1867; and the specimen here figured, which by no means exceeds in beauty and size of flower (which in Gray's description and dried specimens are four inches in diameter) the native specimens, was raised from seeds sent by Mr. Bolander to Mr. Thompson, of the Ipswich Nurseries, who flowered it last summer in perfection.

DESCR. *Stem* about a foot high, simple or much branched, leafy, and as well as the whole plant, minutely pubescent and pale green. *Leaves* shortly petioled, oblong-lanceolate,

two inches long, tapering at both extremities, obtuse, quite entire. *Flowers* crowded, and covering the whole upper part of the plant. *Calyx-tube* narrow-oblong, rather hirsute; lobes one inch long, connate into a boat-shaped limb, which is split on one side. *Petals* one inch and a half to two inches long, obcordate, rose-red, with a large diffused crimson-purple blotch above the claw. *Stamens* with short subulate pale filaments; anthers erect, subulate-lanceolate, acuminate, red below, golden-yellow towards the tips. *Ovary* one inch long; style straight, erect, stigmas four, large, linear-recurved, yellow. *Capsule* herbaceous, ovoid-oblong, one inch long. *Seeds* very numerous in each cell, testa brown, furfuraceous.—*J. D. H.*

Fig. 1, Flower with petals removed; 2, style and stigmas:—both slightly *magnified.*

5868.

A

B.

5.

6

W Fitch del et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5868. A & B.

A SERAPIAS CORDIGERA.

Heart-lipped Serapias.

B SERAPIAS LINGUA.

Tongue-lipped Serapias.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char.—*Sepala* cum petalis in galeam cucullatam connata. *Petala* e basi dilatata longe cuspidata. *Labellum* basi columnæ insertum, sessile, basi bilamellatum, disco pilosum, trilobum, lobis lateralibus parvis adscendentibus, intermedio elongato deflexo linguæformi. *Columna* elongata, aptera, clinandrio postice in acumen elongatum producto, antice supra stigma prominente indiviso in cucullum plicato. *Anthera* verticalis, loculis basi adscendentibus, clinandrio incumbentibus. *Pollinia* esulca, caudiculis distinctis, glandula communi intra bursiculam recondita.—*Herbæ* Mediterraneæ, *radice bituberata*, *caule folioso*. Flores *laxe spicati*, *bracteis magnis cucullatis coloratis*. Endl.

A Serapias *cordigera;* tuberculis sessilibus, altero rarissime pedicellato, spica prima anthesi congesta, bracteis flore sæpe longioribus, labelli laciniis lateralibus obtusis erectis conniventibus, intermedio longiore aquilato ovato basi sæpe cordato acuminato, disco piloso, callo basilari profunde 2-lobo.

Serapias cordigera, *Linn. Sp. Pl. n.* 1345. *Lindl. Gen. and Sp. Orchid.* 377. *Sibthorp, Flora Græca, t.* 932. *Andrews, Bot. Rep. t.* 475. *Reich. Fl. Germ.*, t. 440.

Serapias ovalis, *Rich. in Mem. Mus. Hist. Nat.*, vol. iv. p. 54.

B Serapias *Lingua;* tuberculo altero sessili altero sæpissime pedicellato, spica prima anthesi laxa, bracteis floribus brevioribus, labelli laciniis lateralibus ovatis obtusis, intermedio longiore angustiore oblongo-lanceolato acuminato glabrato, callo basilari medio obscure sulcato v. plano.

Serapias Lingua, *Linn. Sp. Pl. n.* 1344. *Lindl. Gen. and Sp. Orchid.* 377. *Hook. Exot. Flor.* t. 11. *Sibthorp, Fl. Græca,* t. 931. *Reich. Fl. Germ.* t. 439.

Serapias oxyglottis, *Bert. Amæn. Ital.*, p. 202.

The two interesting, but very variable orchids here figured, are natives of pine woods, heaths, shrubberies, and hilly

pastures throughout the whole Mediterranean region except Egypt. Of these, *S. Lingua*, which is emphatically called by Reichenbach "decus Floris Mediterraneæ," extends from Crete and Smyrna to Portugal. *S. cordigera* has a still wider range, from Syria and the Taurus to the Azores—a very unusual distribution for an orchid that is restricted in latitudinal range, and which, though abundant in North Africa, does not extend to Madeira or the Canary Islands. Both species are found in Algeria.

The species of *Serapias* are easy of cultivation in thoroughly drained pots, with a light loamy soil, where they form their leaves in winter, and flower in early spring. The Royal Gardens have received tubers of both species from J. T. Moggridge, Esq., collected at Mentone; from Prof. Orphanides of Athens, and from H.R.H. the Comte de Paris, in whose rich collection of terrestrial European orchids at Twickenham the species of Serapias form a conspicuous feature.—*J. D. H.*

Fig. A 1, 2, and 3, Whole plant, lip, and column of *S. cordigera*.
Fig. B 1, 2, and 3, Ditto of *S. lingua*. Figs. 2 and 3 in both cases *magnified*.

Vincent Brooks Day & Son imp

Tab. 5869.

ARISTOLOCHIA BARBATA.

Bearded Birthwort.

Nat. Ord. Aristolochieæ.—Gynandria Hexandria.

Gen. Char. (*Vide supra*, Tab. 5420.)

Aristolochia (Gymnolobus) *barbata;* fruticosa, caule volubili angulato, ramulis foliisque subtus pubescentibus, foliis longiuscule petiolatis deltoideo- v. sagittato-cordatis obtusis acutisve supra glabris, auriculis basi magnis rotundatis, sinu semiclauso v. aperto, floribus longiuscule pedicellatis axillaribus solitariis, perianthio pallido, tubo basi obovoideo-globoso inflato, fauce late infundibuliformi, ore lato hiante oblique truncato buccæformi venoso, labio parvo stipitato suborbiculari intus supra medium processubus elongatis purpureis dense barbato.

Aristolochia barbata, *Jacq. Collect. Bot.* vol. iii. p. 221. *Stirp. Rar.* vol. iii. p. 17, t. 608. *Willd. Sp. Pl.* vol. iv. part 1, p. 156. *Duchartre in DC. Prod.* vol. xv. part 1, p. 447. *Griseb. Fl. Brit. W. Ind.* p. 299.

Aristolochia dictyantha, *Duchartre in Ann. Sc. Nat.* sér. 4, vol. ii. p. 40, b. 6, f. 1-2, *et in DC. Prod.* l. c. p. 446.

Howardia barbata, *Klotzsch, in Monatsb. Acad. Berol.* 1859, p. 613.

An elegant species of *Aristolochia*, a native of Venezuela and the neighbouring island of Trinidad. It was raised from seed sent by Mr. Ernst, of Caraccas, a gentleman well known for his scientific collections, and the impulse he has given to the progress of science in the distant settlement which he has made his home, by the publication of many papers of interest in the "Vargasia," a journal devoted to various branches of natural knowledge, and known as the Boletin de Sociedad de Ciencias Fisicas y Naturales de Caraccas. *A. barbata* forms a slender stove climber, flowering in September.

Descr. *Stems* many from the root, slender, angular, twining, woody below, three to eight feet high; branches pendent.

November 1st, 1870.

Leaves on long slender petioles ; blade two to four inches long, very variable in breadth and in the depth of the closed or open basal sinus, deltoid-cordate or oblong-cordate or subsagittate, with large rounded somewhat incurved auricles, tip obtuse or acute, margins subrecurved, upper surface deep green, glabrous, under softly pubescent and glaucous. *Flowers* solitary, axillary, on slender curved peduncles exceeding the petioles. *Perianth* two inches and a half long ; basal portion bladdery, broadly obovoid, half to two-thirds of an inch long, pale green ; tubular portion nearly straight, strongly ribbed, expanding into an obliquely recurved trumpet-shaped limb one inch in diameter, hairy within, glabrous, coarsely reticulated, and pale-brown externally. *Lip* stalked, much smaller than the mouth of the perianth, suborbicular, rather arched, brown, with stout reticulated green veins externally, pale-green within, the distal half clothed beneath with long filiform purple processes. *Anthers* six, linear. *Stigmas* six, deltoid-subulate, incurved, ochreous-yellow.—*J. D. H.*

Fig. 1, Longitudinal section of base of perianth, showing the stamens and stigmas :—*magnified*.

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Tab. 5870.

GREVILLEA Banksii.

Sir Joseph Banks' Grevillea.

Nat. Ord. Proteaceæ.—Tetrandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5837.)

Grevillea (Eugrevillea) *Banksii*; ramulis robustis et inflorescentia albo-tomentosis, foliis 4-8-pollicaribus profunde pinnatisectis, segmentis remotis anguste lineari-lanceolatis obtusis v. mucronatis marginibus recurvis supra glabris subtus sericeo-tomentosis, racemis terminalibus solitariis v. subpaniculatis, perianthio rubro extus tomentoso, tubo breviusculo inflato apice revoluto, ore contracto, toro subrecto, ovario sessili villoso, stylo elongato glabro apice clavato, stigmate obliquo v. laterali convexo, fructu oblique ovoideo subacuto compresso.

Grevillea Banksii, *Br. in Trans. Linn. Soc.*, vol. x. p. 176. *Prod.* p. 379. *Bauer, Ill. Pl. Nov. Holl.*, t. 9. *Meissn. in DC. Prod.*, vol. xiv. p. 375. *Benth. Fl. Austral.*, vol. v. p. 435.

In its robust shrubby habit, and stout raceme of large flowers, this forms a strange contrast to the delicate looking and feathery-foliaged *G. Preissii* figured in the early part of this volume (Tab. 5837), and is one of many instances of the remarkable differences in habit displayed by various members of many of the large Australian genera. It forms a tall shrub or slender tree, of fifteen to twenty feet in height, and when covered with its scarlet blossoms, must present a magnificent appearance in the Australian bush. The genus to which it belongs contains upwards of one hundred and fifty species, of which all but two or three (New Caledonian) members belong to Australia; many are as deserving of cultivation as that here figured, but like most Australian hard-wooded plants they require a peculiar treatment, so different from that of ordinary greenhouse stock of the present day, that as a rule they are usually rapidly killed by mistaken

kindness, succumbing under the favourite regimen of too much heat during winter and a perennial drenching with the watering-pot. In a stiff well-drained soil, sparingly watered in the growing season, and hardly at all at other times, they succeed well, give little trouble, and amply repay the cultivator's care.

Grevillea Banksii is a native of barren hills in the Queensland colony, where it was discovered by Brown during Flinders' voyage, and has since then been found by various collectors: the plant here figured, which was five feet high, was raised and flowered by Messrs. Osborn of Fulham, who liberally sent it to Kew for figuring in the Magazine in August last.

Descr. A tall shrub or slender tree of fifteen to twenty feet; branches and inflorescence softly tomentose. *Leaves* four to eight inches long, deeply pinnatifid or pinnatisect, with three to eleven broadly linear or narrow lanceolate segments, which are obtuse or mucronate, with recurved margins, two to four inches long, glabrous above, silky underneath, the midrib alone prominent or obscurely penniveined; here and there a small undivided leaf occurs. *Racemes* terminal, erect, dense, two to four inches long, solitary or two or three on a terminal leafless peduncle. *Flowers* red. *Pedicels* three to four lines long, tomentose as well as the rhaches. *Perianth* tomentose outside, glabrous inside, the tube not very broad, six or seven lines long, contracted and revolute under the limb. *Torus* straight, or nearly so. *Gland* prominent, semi-annular, more or less lobed or jagged. *Ovary* sessile, densely villous; style long and glabrous, clavate under the very oblique or lateral convex stigmatic disk. *Fruit* obliquely ovate, compressed, almost acute, about one inch long.—*J. D. H.*

Fig. 1, Flowers; 2, follicle:—*both magnified.*

Vincent Brooks, Day & Son Lith.

Tab. 5871.

DODECATHEON Meadia, var. frigidum.

American Cowslip, or Shooting Star; Arctic variety.

Nat. Ord. Primulaceæ.—Pentandria Monogynia.

Gen. Char.—*Calyx* profunde 5-lobus, lobis lanceolatis reflexis. *Corolla* 5-partita, tubo brevissimo, fauce incrassato, segmentis reflexis lineari-oblongis. *Stamina* 5, corollæ fauce inserta, filamentis brevibus crassiusculis monadelphis; antheræ elongatæ, in conum conniventes, basifixæ, lineari-subulatæ, longitudinaliter dehiscentes. *Ovarium* subglobosum; stylus strictus, elongatus, filiformis, stigmate capitellato; ovula plurima. *Capsula* subcylindrica, apice valvis 5 brevibus dehiscens. *Semina* plurima, compresso-lenticularia, umbilico ventrali, albumine carnoso; embryo rectus, umbilico parallelus.—Herba *valde variabilis* boreali-Americana, *acaulis, scapigera.* Folia *omnia radicalia, petiolata v. subsessilia, integerrima v. repando-dentata.* Scapi *solitarii.* Flores *umbellati, cernui.*

Dodecatheon *Meadia.* Linn. *Sp. Pl.* 207. Tab. nost. 12.

Var. *frigidum*, foliis oblongo-ovatis petiolatis integerrimis, involucri foliolis parvis angustis, corolla rubro-purpurea antheris atro-fuscis filamentis multoties longioribus.

Dodecatheon frigidum; *Cham. et Schlecht. in Linnæa*, vol. i. p. 217. *Seemann. Bot. Herald, Voy.*, t. 9; *DC. Prodr.*, vol. x. p. 8.

Dodecatheon speciosum, *Hort.*

A native of the Rocky Mountains and coast ranges of Western N. America, from lat. 35° N. in California to the Arctic seacoast, abounding in mountain slopes, rocky places, and stony, often saline plains, ascending to seven thousand feet in the Cascade range, and replacing in Western America the usually large and paler-flowered typical *D. Meadia* of the United States. Though differing from the Eastern species in the few points detailed in the description, and especially in size, there is no question but that Dr. Gray is correct in

November 1st, 1870.

considering this and all the other species of *Dodecatheon* are but varieties of the original *D. Meadia*, into which all pass by insensible gradations. Of these the subject of the present plate is one of the most distinct in size, in the brilliant colour of its few flowers, in its few small involucral bracts, and in its narrow dark stamens; but none of these characters are constant, least of all that of colour, which varies to lilac and white; whilst the petioles of the leaf are sometimes as long as the blade. It is a singular fact that a genus so widely dispersed as *Dodecatheon* is, throughout a belt of thirty degrees of latitude, and extending in longitude right across America, and to the islands of the Aleutian Sea, and Behring's Straits, should be found only on one spot on the opposite coast of N. America, and not extend westward of the Gulf of St. Lawrence.

The specimens from which our plate was taken were raised from seed collected in the mountains of British Columbia, and which flowered at Kew in May of the present year. It is by far the most brightly coloured form hitherto discovered, and is very ornamental.—*J. D. H.*

Fig. 1, Flower, with the corolla segments removed; 2, calyx and ovary:—*both magnified.*

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Tab. 5872.

STENOGLOTTIS FIMBRIATA.

Spotted Natal Orchid.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char.—*Sepala* margine erosula, late ovata, obtusa, conniventia, demum patentia, libera, æqualia. *Petala* sepalis consimilia sed minora et magis erosa, libera, concava. *Labellum* elongatum, lineari-oblongum, ecalcaratum, rectum, æstivatione involutum, alte 3-lobum, lobis subæquilongis parallelis intermedio angustiore. *Columna* brevis, erecta, obtusa, loculis parallelis; staminodiis erectis falcatis obtusis lateribus columnæ adnatis. *Pollinia* erecta, caudiculis brevibus, glandulis singulis sacculo absconditis, granulis magnis laxis, rostello brevi latiusculo obtuso.—*Herba* Capensis, *tuberibus elongatis fasciculatis*. Folia *omnia radicalia, numerosa, rosulata, lineari-oblonga, mucronulata, undulata*. Scapi *graciles, bracteati*. Spica *laxiflora*. Flores *parvi, pallide rosei*.

Stenoglottis *fimbriata*, Lindl. in *Hook. Comp. Bot. Mag.* vol. ii. p. 210. *Harvey, Thes. Capens.*, t. 56.

A very curious and pretty little plant, which I refer without doubt to *S. fimbriata* of Lindley, though I do not find the petals to be lacerate at the edge, as described by that author, but only erose on the margins under a high magnifying power, as are the sepals and labellum, though in a less degree. It is a native of various parts of the Cape district, from Grahamstown to Port Natal, and is evidently a very variable plant, for I find two forms of it in a collection of drawings of Cape orchids made by Mr. Saunderson of Natal (and of which he has kindly allowed me to keep copies). Of these forms neither quite agrees with that here figured, both have larger leaves, in one these are quite unspotted, and the lobes of the lip are broader; in the other the leaves are obscurely spotted, the bracts larger than in our figure, and the lateral lobes of the lip deeply toothed on the outer margin. The flowers are

never resupinate, as described by Harvey, though from the gibbous form of the bud they sometimes appear to be so.

Our specimen belongs to the rich collection of my friend W. Wilson Saunders, F.R.S., with whom it flowered in August of the present year.

Descr. *Roots* of stout, sub-cylindric, fascicled, oblong tubers. *Leaves* very numerous, horizontally spreading, one and a half to two inches long, linear-oblong, mucronate, undulate, deep green, with many black, transverse blotches disposed in two or three longitudinal rows. *Scape* slender, erect, six to eight inches high, including the long, many-flowered, erect spike; bracts on the scape few, and as well as those beneath the flowers lanceolate, shorter than the ovary, green, blotched with black. *Flowers* one-third of an inch in diam., rose-pink, with a few purple blotches on the lip; ovary half an inch long. *Sepals* at first arched and curving, then spreading, broadly-ovate, obtuse, margins finely erose. *Petals* rather smaller, connivent, margins more deeply erose. *Lip* twice as long as the sepals, projecting, linear or oblong-obovate in outline, equally 3-fid to near the middle; segments nearly parallel; the lateral slightly curved, acute or obtuse, outer margin slightly or strongly toothed; mid-lobe narrow, entire. *Column* very short, obtuse, with an adnate obtuse staminode on each side.—*J. D. H.*

Fig. 1, lateral, and 2, front view of flower; 3, column and lip; 4, lip; 5, front, and 6, side view of column; 7, pollen-mass:—*all magnified.*

W.W. Saunders, Esq. del. Fitch, lith.

Vincent Brooks, Day & Son, Imp

Tab. 5873.

GLADIOLUS Saundersii.

Mr. Wilson Saunders' Gladiolus.

Nat. Ord. Irideæ.—Hexandria Monogynia.

Gen. Char. (*Vide supra*, Tab. 5427.)

Gladiolus *Saundersii*; scapo 2-3-pedali, foliis elongato-ensiformibus $\frac{1}{2}$-$\frac{3}{4}$ poll. latis, longe acuminatis rigidis valide nervosis, spicâ laxiflorâ, floribus alternis non distichis, bracteis tubo perianthii longioribus anguste lanceolatis acuminatis, perianthio decurvo, limbo latiore quam longo, segmentis obovato-oblongis cuspidatis, superiore fornicato porrecto lateralibusque 2 exterioribus reflexis coccineis fere concoloribus, 3 inferioribus reflexo-decurvis coccineis infra medium albis coccineo-maculatis, antheris flavis, stigmatibus rubris gracilibus recurvis.

A near ally of the long known *G. psittacinus*, Hook., of our gardens (Tab. Nost. 3032), but a much more handsome plant, remarkable for the vivid colour of the curiously deflexed and very broad perianth. It was discovered by Mr. Cooper, when collecting for W. Wilson Saunders, Esq., on the summit of the Wetteberg mountain, in the Albert district of Cape Colony, from whom we have a dried specimen. There is also in the Hookerian Herbarium, a specimen, apparently of the same species, though with more speckled flowers (judging from its dried state) gathered near the "Fat river" (probably the Vet river in the Orange River Republic), by Mr. Burke, when collecting animals and plants for the late Earl of Derby. Both these specimens are labelled in the Hookerian Herbarium *G. natalensis*, by Mr. Klat, the author of an elaborate memoir on the Irideæ in the Linnæa (v. 32, wherein the unpublished name of *G. natalensis* Reinw. MSS., is without reason substituted for that of *psittacinus*). Though the flowers of *psittacinus* and *Saundersii* are not easily distinguishable in a dry state, the leaves are so, those of the latter species being much narrower and longer, with very strong shining ribs. Our

plate is taken from a drawing made by Mr. Saunders, in whose garden the plant flowered in autumn.

Descr. *Scape* two to three feet high, stout, erect, leafy. *Leaves* as long, half to three-quarters of an inch broad, gradually narrowed to the very acuminate point, strongly nerved, the nerves pale and shining when dry. *Flowers*, six to twelve, rather remote; bracts narrow lanceolate, as long as the perianth tube. *Perianth* decurved, three to three and a half inches in diameter; segments obovate-oblong, cuspidate; upper most arched prominent and deflexed; upper lateral, wing-like, spreading and recurved, scarlet, paler and spotted on one side; three lower segments smaller, recurved, crimson above the middle, white spotted with red towards the edges below the middle. *Anthers* yellow. *Stigmas* slender, recurved, pale red.—*J. D. H.*

Fig. 1, upper; 2, lower lateral; and 3, lower lateral segment; 4, stamen; 5, stigmas—*all magnified.*

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp

Tab. 5874.

CASSIA mimosoides, var. Telfairiana.

Mimosa-leaved Cassia, Telfair's variety.

Nat. Ord. Leguminosæ.—Decandria Monogynia.

Gen. Char.—*Calycis* tubus brevissimus, segmentis 5 imbricatis. *Petala* 5, imbricata, subæqualia, summo intimo. *Stamina* 10, omnia perfecta et subæqualia v. nonnulla superiora minora v. imperfecta, nunc 5; antherarum loculi poro v. rima apicali raro basilari dehiscentes. *Ovarium* liberum, sæpius arcuatum; stylus brevis v. elongatus, stigmate truncato v. parvo; ovula ∞. *Legumen* teres v. compressum, indehiscens v. 2-valve, intus nudum v. septatum. *Semina* sæpius transversa, albuminosa; cotyledones ovatæ, planæ v. undulatæ, radicula brevi recta.—*Arbores frutices v. herbæ tropicæ v. subtropicæ.* Folia *abrupte-pinnata, rarius ad phyllodia reducta.* Stipulæ *variæ.* Inflorescentia *varia.* Flores *flavi, albi, v. rubidi.*

Cassia (Chamæcrista) *mimosoides;* annua, herbacea, appresse pilosa v. glabrata, foliolis 20-∞ jugis lineari-oblongis subfalcatis v. subdimidiatis mucronatis, glandula sessili infra juga, pedicellis solitariis v. aggregatis folio brevioribus, legumine pubescente.

Cassia mimosoides, *Linn. Sp. Pl.*, p. 543. *Vogel in Linnæa.* vol. xi. p. 714. *Walp. Rep.* vol. i. p. 837.

Var. *Telfairiana*, caule erecto, foliolis 30-60-jugis angustis ⅓ poll-longis, petiolo non marginato, glandulla magna, floribus diametro pollicaribus. C. Telfairiana, *Wall. Cat.* n. 5324. C. pulchella, *Bojer*, *Hort. Maurit.* p. 122. C. angustissima, *Lamarck*, *Dict.* vol. i. p. 650.

Cassia mimosoides is a rather common Asiatic and African tropical and subtropical plant, growing on dry banks, and presenting a beautiful appearance from the softness of its finely divided, bright green, feathery foliage, elegant habit, and the beauty of its golden flowers, which are abundantly produced, and supported on hair-like pedicels. Like so many tropical plants of wide distribution, it varies much, and the variety here figured, which attains a height of five feet, is perhaps the most graceful of any. It is a native of Zanzibar and other places on the east coast of

Africa, from Natal northwards, and was introduced into the Botanical Garden of Calcutta from the Mauritius, where it is almost naturalized. Unfortunately it is usually an annual, though it sometimes forms a woody stem of longer duration. The specimen figured flowered in the Royal Gardens in October of the present year.

Descr. *Stems* solitary or many, erect or ascending from an annual or biennial root, slender, terete, and covered like the leaves, calyx, and pod, with appressed pubescence. *Leaves* two to three inches long, drooping; petiole very short, cylindric; leaflets thirty to sixty pair, one-third of an inch long, linear, mucronate, obscurely falcate, sessile, deep green; gland between the basal pair large, orbicular. *Stipules* subulate from a triangular base, erect, longer than the leaflets. *Peduncles* axillary, solitary or fascicled, capillary, erecto-patent, half as long as the leaves; buds deflexed, acuminate. *Flowers* one inch in diameter. *Sepals* lanceolate. *Petals* subequal, golden-yellow, elliptic-ovate. *Stamens* seven to eight; anthers large, with two terminal pores. *Pod* long or short, much compressed, acuminate, not septate within, dehiscent; valves flat. *Seeds* vertical, compressed.—*J. D. H.*

Fig. 1, base of leaf and stipules; 2, flower and top of pedicel with bracts, the petals removed:—*both magnified.*

Vincent Brooks Day & Son, Imp

Tab. 5875.

EULOPHIA Helleborina.

Helleborine Eulophia.

Nat. Ord. Orchideæ.—Gynandria Monandria.

Gen. Char. (*Vide supra*, Tab. 5561.)

Eulophia *Helleborina ;* caule folioso basi non incrassato (pseudobulbo nullo), foliis alternis remotis oblongis oblongo-lanceolatisve subacutis, vaginis brevibus, spica sparsiflora, bracteis foliaceis, sepalo posteriore fusco-viridi lineari-oblongo fornicato obtuso cum petalis consimilibus sigmoideo falcatis connivente, lateralibus fusco-viridibus paulo majoribus patenti-recurvis apicibus incurvis, labello amplo pallide roseo basi contracto 2-carinato dein in laminam sub $\frac{1}{2}$-circularem 2-fidam margine undulatam dilatato, calcare ovario subæquilongo, basi late conico-infundibuliforme apice contracto truncato v. 2-lobo, columna brevi sessili.

A native of Sierra Leone, whence living specimens were sent to the Royal Gardens by our valued correspondent H. Bockstatt, Esq., and which arrived in full flower in a Ward's-case in September of the present year.

E. Helleborina, so called from its resemblance to the Helleborine (*Epipactis latifolia*), differs much from its congeners in wanting the pseudo-bulbs uniformly ascribed to the genus, but which are equally wanting in *E. ensata*, Lindl. (Bot. Reg. t. 1147), also a native of Sierra Leone; and in the very short column being completely concealed by the dorsal sepals and petals, which arch forward and form a sort of helmet over that organ. In colour of flower and form of lip it much resembles the W. African *E. guineensis* (Tab. Nost. 2467), but differs widely in habit.

The genus *Eulophia* is a very large one, it abounds in tropical Africa, and extends thence into India, and is divisible into several very distinct sections, if not different genera.

Descr. *Tubers* subterranean. *Stem* slender, cylindric, ten to twelve inches high, not swelling into a pseudo-bulb at the base, leafy throughout. *Leaves* alternate, rather distant,

three to four inches long, sessile, with short, amplexicaul and sheathing bases, oblong-lanceolate, sub-acute, not plaited, 5-nerved, deep green. *Spike* slender, six to ten-flowered; bracts leaf-like, the lower much larger than the flower, upper smaller, all ovate or ovate-lanceolate, acute, sessile. *Flowers* sessile, distant, horizontal. *Ovary* arched, three-quarters of an inch long, cylindric. *Perianth* one to one and a quarter inches in diameter from upper sepal to tip of lip. *Upper sepal* falcate and fornicate, linear, obtuse, together with the very similar petals forming a small hood over the column, all of them green inside, with broad brown edges, and midrib on the outside. *Lateral sepals* rather larger, spreading and recurved, with incurved tips of the same colour. *Lip* much larger than the sepals or petals; limb semicircular, with a broadly cuneate base that is suddenly contracted into a rather broad claw with two ridges, margin irregular, tip cleft. *Spur* with a very broad subconic base, and short, truncate, or 2-lobed tip. *Column* short, broad, concealed under the dorsal sepals and petals.—*J. D. H.*

Fig. 1, Flower; 2, base of lip, spur, and anther:—*both magnified.*

5876.

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2.

W. Fitch, del. et lith.

Vincent Brooks, Day & Son, Imp.

Tab. 5876.

TACSONIA QUITENSIS.

Quito Tacsonia.

Nat. Ord. Passifloreæ.—Pentandria Trigynia.

Gen. Char. (*Vide supra*, Tab. 5571.)

Tacsonia (Bracteogamia) *quitensis;* ramulis angulatis pubescentibus, foliis profunde 3-lobis lobis ovatis acuminatis serratis supra glabriusculis subtus molliter pubescentibus v. velutinis, petiolo brevi glandulis sessilibus, stipulis dimidiato-orbiculatis v. falcato-ovatis denticulatis acutis, bracteis in tubum velutinum non venosum 3-lobum basi subventricosum connatis, calycis tubo cylindrico elongato lobisque extus canopubescentibus, sepalis intus petalisque oblongis coccineis.

Tacsonia *quitensis*, *Benth. Plant. Hartweg*, p. 183. *Masters*, in *Gard. Chron.* 1869, p. 388, 1870, p. 955.

This is another New Grenadan and Equador Tacsonia of the same section as *T. mollissima* (Tab. Nost. 4187) and *T. eriantha* (Tab. Nost. 5750), from both of which it differs by slight, and perhaps not altogether constant characters—from *mollissima* in the much less tomentose branches, stem, and leaves; from *eriantha* in the shape of the bract-tube, which is here not ribbed and veined; and from both in the far more beautiful flower, which is of a bright rose-crimson colour. It is a native of the Quitenian Andes, whence we have dried specimens collected by its discoverer, Hartweg, who states that it grows wild in ravines near the city, and is also cultivated;—from Dr. Jameson, who gives its range in altitude as 8500 to 13,000 feet;—from Spruce, who found it in woods on the western slopes of Pichincha;—and from McLean, gathered in Peru (but without locality). There are still several other very similar Venezuelan, New Grenadan, Equadorian, and Peruvian species of this section to be introduced, amongst which it is very difficult to find specific characters, if indeed most may not prove to be varieties of one widely diffused

species which extends along the mountains of the coasts of the Caribbean sea or Spanish main, from the mouths of the Magdalena to Venezuela, and thence along the Andes to Peru.

Flowering specimens of *T. quitensis* were first sent to me by Isaac Anderson Henry, Esq., F.L.S., in July of this year, and the specimen here figured flowered in the Temperate House of the Royal Gardens in October. The plants in both cases were raised from seeds sent by Professor Jameson, so long Professor of Botany in the University of Quito, and the zealous explorer during forty years of Andean botany, who has now removed to the University of San Juan, on the west side of the Andes of Chili; a country of which exceedingly little is known botanically, and from whence we expect many novelties from our old friend.—*J. D. H.*

Fig. 1, Vertical section of base of calyx-tube, of the *natural size*; and 2, portion of corona—*magnified.*

W. Fitch, del. et lith.

Vincent Brooks Day & Son, Imp.

Tab. 5877.

GEISSORHIZA GRANDIS.

Large-flowered Tile-root.

Nat. Ord. Irideæ.—Triandria Monogynia.

Gen. Char.—*Perianthium* corollinum, infundibuliforme, tubo brevi v. elongato; limbi ampli 6-partiti laciniæ subæquales, basi poro nectarifero instructæ, erecto-patentes. *Stamina* 3, tubo perianthii inserta, suberecta, inclusa, filamentis filiformibus; antheræ lineares, basifixæ. *Ovarium* obtuse 3-gonum, 3-loculare; stylus filiformis, stigmatibus 3 lineari-cuneatis conduplicatis margine subfimbriatis; ovula plurima, in angulo centrali locularum 2-seriata, horizontalia, anatropa. *Capsula* membranacea, prismatico-3-gona, 3-locularis, loculicido-3-valvis. *Semina* plurima minuta.—*Herbæ* Africæ-australis *et* Abyssiniæ. Rhizoma *bulboso-tuberosum, bulbo exuviis crustaceis v. scariosis deorsum imbricatis tunicato.* Folia *pauca, radicalia v. radicalia et caulina, setacea linearia v. ensiformia.* Scapus *simplex v. ramosus.* Flores *secundi, solitarii v. spicati, singuli spatha 2-valvi inclusis.*

Geissorhiza *grandis;* caule robusto pedali folioso, foliis $\frac{2}{3}$ poll. diam. lineari-ensiformibus obtusis, spica 5-7-flora, bracteis spathaceis convolutis lanceolatis perianthii tubum gracillimum elongatum pollicarem superantibus, perianthii limbo 2 poll. diam. segmentis æqualibus obovato-ellipticis obtusis pallide stramineis costa tenui sanguinea, antheris fusco-purpureis.

The genus *Geissorhiza* includes some twenty species, all natives of the Cape Colony, with the exception of an undescribed Madagascarian, and an Abyssinian one (*G. abyssinica,* Br.), which extends from Abyssinia across tropical Africa to the Cameroons Mountains, in the Bight of Benin (*G. montana,* Hk. F.), and to which Klat has further referred a Cape species. Of all these not one approaches either in stature or size of flower the subject of the present plate, of which bulbs were sent to the Royal Gardens in 1866, by Mr. Wilson, keeper of St. George's Park, Port Elizabeth, and which flowered first in May, 1868.

Descr. *Bulbs* globose, the size of a hazel-nut, clothed with a delicate closely reticulated fibrous tunic. *Stem* ten to

twelve inches high, stout, leafy throughout. *Leaves* radical, eight inches long by three-quarters broad, linear-ensiform, obtuse, green, strongly ribbed towards the base; those on the scape shorter but nearly as broad. *Spike* six to eight-flowered. *Flowers* inclined; spathaceous bracts narrow-lanceolate, convolute, longer than the perianth tube, which is about one inch long and very slender. *Perianth* two inches to two and a half in diameter; segments elliptic-obovate, obtuse, patent, pale straw-coloured, with a blood-red midrib, which is very slender in front, but broader at the back, and expands at the base, extending over the claw and tube. *Filaments* pale; anthers linear-sagittate, red-brown. *Stigmas* pale, recurved.—*J. D. H.*

Fig. 1, Section of tube of perianth, showing the stamens, style, and stigmas; fig. 2, transverse section of immature fruit:—*both magnified.*

INDEX,

In which the Latin Names of the Plants contained in the Twenty-sixth Volume of the THIRD SERIES (or Ninety-sixth Volume of the Work) are alphabetically arranged.

PLATE

5835 Acacia riceana.
5848 Anthurium ornatum.
5816 Antigonon leptopus.
5836 Arenaria purpurasceus.
5869 Aristolochia barbata.
5854 Asimina Triloba.
5866 Barleria Mackenii.
5857 Brodiæa coccinea.
5862 Calochortus Leichtlinii
5874 Cassia mimosoides
5856 Cereus fulgidus.
5829 Clavija macrophylla.
5865 Clusia odorata.
5817 Cucumis Anguria.
5821 Curcuma Petiolata.
5838 Cyclonema myricoides.
5851 Cymbidium canaliculatum.
5855 Cypripedium candidum.
5813 Dahlia imperialis.
5819 Delphinium nudicaule.
5825 Dendrobium lasioglossum.
5871 Dodecatheon Meadia; var. *frigidum.*
5846 Dracæna cylindrica.
5822 Enkyanthus Japonicus.
5853 Eritrichium nanum.
5824 Erythrochiton Hypophyllanthus.
5875 Eulophie Helleborina.
5877 Geissorhiza grandis.
5873 Gladiolus Saundersii.
5870 Grevillea Banksii.
5837 Grevillea Preissii.
5842 Hechtia Ghiesbreghtii.
5839 Hernandia mœrenhoutiana.

PLATE

5820 Hoya Australis.
5847 Iris Iberica.
5814 Jerdonia indica.
5863 Leptosiphon parviflorus; var. *rosaceus.*
5827 Linaria tristis.
5861 Lissochilus Krebsii.
5852 Malope malacoides.
5843 Miltonia Warscewiczii.
5818 Monolena Primulæflora.
5840 Mormodes Colossus.
5831 Narcissus bulbocodium; var. *monophyllus.*
5828 Œnothera marginata.
5867 Œnothera Whitneyi.
5858 Oncidium cryptocopis.
5844 Ophrys speculum.
5833 Orthosiphon stamineus.
5826 Paranephelius uniflorus.
5864 Passiflora arborea.
5815 Phalænopsis Parishii.
5841 Plectranthus coleoides.
5832 Rhynchotechum ellipticum.
5860 Salvia interrupta.
5849 Saxifraga aretioides
5868A Serapias cordigera.
5868B Serapias Lingua.
5823 Solanum venustum.
5872 Stenoglottis fimbriata
5830 Stylophorum japonicum.
5859 Tabernæmontana Barteri.
5876 Tacsonia quitensis.
5850 Tillandsia Lindeniana.
5834 Vanda cærulescens.
5845 Vanda Cathcarti.

INDEX,

In which the English Names of the Plants contained in the Twenty-sixth Volume of the THIRD SERIES (or Ninety-sixth Volume of the Work), are alphabetically arranged.

PLATE

5835 Acacia, Mr. Spring-Rice's.
5848 Anthurium, white-spathed.
5816 Antigonon, slender-stemmed.
5854 Apple, North American Papaw or Custard.
5866 Barleria, Mr. McKen's.
5869 Birthwort, bearded.
5857 Brodiæa, scarlet-flowered.
5862 Calochortus, Max Leichtlin's.
5874 Cassia, mimosa-leaved.
5856 Cereus, glittering-flowered.
5829 Clavija, large-leaved.
5865 Clusia, sweet-scented.
5871 Cowslip, American or Shooting Star; *Arctic variety.*
5821 Curcuma, long-petioled.
5838 Cyclonema, myrica-like.
5851 Cymbidium, channelled-leaved.
5813 Dahlia, Imperial.
5825 Dendrobe, hairy-lipped.
5846 Dracæna, cylindric-spiked.
5822 Enkyanthus, Japanese.
5853 Eritrichium, dwarf alpine.
5824 Erythrochiton, Linden's.
5875 Eulophia, Helleborine.
5817 Gherkin, West Indian.
5873 Gladiolus, Mr. Wilson Saunders'.
5837 Grevillea, Preiss's.
5870 Grevillea, Sir Joseph Banks'.
5842 Hechtia, Ghiesbreght's.
5839 Hernandia, Tahitian.
5820 Hoya, Australian.
5847 Iris, Iberian.
5814 Jerdonia, Indian.
5855 Lady's Slipper, small white, or Moccasson Flower.

PLATE

5819 Larkspur, naked-stemmed.
5863 Leptosiphon, rosy-flowered.
5861 Lissochilus, Mr. Kreb's.
5852 Mallow, Barbary Bastard.
5843 Miltonia, M. Warscewicz's.
5818 Mondena, primrose-flowered.
5840 Mormodes, large-flowered.
5831 Narcissus, hoop-petticoat; *single-leaved variety.*
5858 Oncidium, long-sepalled.
5844 Ophrys, looking-glass.
5872 Orchid, Spotted Natal.
5833 Orthosiphon, long-stamened.
5826 Paranephelius, single-flowered.
5864 Passion-flower Tree.
5815 Phalænopsis, Rev. C. H. Parish's
5841 Plectranthus, Colens-flowered.
5828 Primrose, red-nerved evening.
5867 Primrose, Whitney's evening.
5832 Rhynchotechum, elliptic-leaved.
5860 Sage, ash-leaved.
5836 Sandwort, purple alpine.
5849 Saxifrage, Aretia-like.
5868A Serapias, heart-lipped.
5868B Serapias, tongue-lipped.
5823 Solanum, graceful.
5830 Stylophorum, Japanese.
5859 Tabernæmontana, Mr. Barter's.
5876 Tacsonia, Quito.
5877 Tile-root, large-flowered.
5850 Tillandsia, M. Linden's.
5827 Toad-flax, sombre-flowered.
5845 Vanda, Mr. Cathcart's.
5834 Vanda, pale-blue.